S0480-1-U

ARIZONA

HEALTH STATUS AND VITAL STATISTICS

1986

SPECIAL SECTION: Deaths From Major Respiratory Causes

ARIZONA DEPARTMENT OF HEALTH SERVICES
Office of Planning and Health Status Monitoring

Evan Mecham, *Governor*
State of Arizona

Ted Williams, *Director*
Arizona Department of Health Services

ARIZONA DEPARTMENT OF HEALTH SERVICES
OFFICE OF PLANNING AND HEALTH STATUS MONITORING
1740 West Adams Street
Phoenix, Arizona 85007

Permission to quote from or reproduce materials from this publication is granted when due acknowledgement is made.

ARIZONA HEALTH STATUS

AND VITAL STATISTICS

1986

BY

JOANNE C. GERSTEN, Ph.D.
CHRISTOPHER K. MRELA, Ph.D.
CHARLES A. CHAPIN, M.S.

ARIZONA DEPARTMENT OF HEALTH SERVICES
Office of Planning and Health Status Monitoring
January, 1988

TABLE OF CONTENTS

INTRODUCTION 2

DATA SOURCES, LIMITATIONS AND DEFINITIONS 3

CLASSIFICATION OF CAUSE OF DEATH 5

LIST OF TABLES 7

LIST OF HEALTH STATUS TABLES 7
LIST OF VITAL STATISTICS TABLES 10

LIST OF FIGURES 13

PART I: HEALTH STATUS 14

1. NATALITY 15

2. TOTAL MORTALITY 22

3. AGE-SPECIFIC MORTALITY 30

Infant Mortality 30
Childhood Mortality 37
Adolescent Mortality 42
Mortality of Young Adults 47
Mortality of Middle-Aged Adults 52
Elderly Mortality 57

4. SPECIAL SECTION: DEATHS FROM MAJOR RESPIRATORY CAUSES 61

5. MORBIDITY 73

Non-Sexually Transmitted Diseases 73
Sexually Transmitted Diseases 74
Acquired Immune Deficiency Syndrome (AIDS) 75

SUMMARY OF STATUS: PROGRESS AND PROBLEMS 80

PART II: VITAL STATISTICS 85

6. POPULATION STATISTICS 86

7. BIRTH STATISTICS 89

8. DEATH STATISTICS 112

9. MARRIAGE AND DIVORCE STATISTICS 133

10. ABORTION STATISTICS 138

INTRODUCTION

This publication by the Arizona Department of Health Services (ADHS) reports on the health status of Arizona residents and presents tables detailing traditional vital statistics information. Consolidation of health status and vital statistics information into one report provides readers with comprehensive data relating to trends in the health of Arizona residents. The wealth of information in Arizona Health Status and Vital Statistics 1986 is organized into two major parts, each with a number of sections.

The first major part of this document is concerned with health status and the second is devoted to vital statistics. The data included in each part are presented in a series of tables. A listing of the tables in each part is given just before the beginning of the health status portion of the report. These listings are intended as an aid to readers who need specific data for planning and other purposes.

The health status portion of the report is a narrative description and summary of health trends which is divided into six sections. The first section deals with natality, i.e., fertility and birth rates, the general health of babies as indicated by their birthweight, and some demographic characteristics of women giving birth. The second section is devoted to the age-adjusted mortality profile of state residents compared to their national counterparts. In addition, differences by gender or county in total and cause-specific mortality are examined.

The third section addresses age-specific mortality by leading causes for six groups: infants, children, adolescents, young adults, middle-aged adults, and the elderly. Gender differences, if any, in cause-specific mortality are examined for each age group as are any distinctions in gender-specific total mortality by urban and rural regions of the state. The fourth section of the report, entitled the Special Section, is devoted, as its name implies, to a mortality issue demanding extra attention. One in seven Arizona residents who died in 1986 succumbed to a serious respiratory disease, i.e. lung cancer, chronic obstructive pulmonary disease (COPD) or pneumonia. Mortality rates for COPD and pneumonia were at their highest level of the past six years and consistently exceeded national rates throughout that period. The considerable and worsening mortality profile seen for deaths from major respiratory causes prompted closer examination in the special section of their geographic and temporal or seasonal patterns. Since the risk of exposure to polluted air varies by area and season, the particular issue examined was whether air quality characteristics were significantly related to the probability of survival from one of these respiratory diseases after the disease was acquired.

Morbidity, states of disease and disability in the population, is the focus of the fifth section. The discussion is limited to those diseases and/or disabilities on which data are collected for the entire population. The sixth and summary section concludes the health status portion of the report. It highlights those trends in health which represent either improvements or deteriorations in health status. Consistency of a health trend over several years is a prime criterion to gauge whether progress has been made or a problem exists in a certain aspect of health status. Problems which signify that Arizona will very likely fail to meet some 1990 Public Health Service objectives in preventing disease, disability, or premature death of its residents receive particular emphasis.

As mentioned earlier, the second part of this report contains traditional vital statistics information. A series of tables summarizes data on population composition, births, deaths, marriages, divorces, and abortions. No narrative description accompanies these tables. In fact, if a traditional vital statistics table supported the narrative in health status, it was included in the first part of this document.

DATA SOURCES, LIMITATIONS AND DEFINITIONS

SOURCES OF DATA

Information on births, deaths and fetal deaths is compiled from the original documents filed in the Vital Records Section and from transcripts of original certificates filed in other states but affecting Arizona residents. (Copies of certificates for births and deaths occurring outside the United States are not sent to Arizona.) This report includes all 1986 births and deaths for which records were received before May 15, 1987, and excludes certificates and transcripts received after that date. Because the number of 1986 vital events which are not included is small, the figures shown are relatively complete counts and are considered satisfactory as descriptive statistics.

Arizona presently has no central registry for marriage and divorce records. Annual statistics are limited to counts of such records furnished monthly by the Clerk of the Superior Court in each county.

POPULATION

Population estimates were prepared by the Population Statistics Unit of Department of Economic Security of Arizona and the U.S. Census Bureau.

RELIABILITY OF RATES

Many of the rates shown in this report are based on a small population, a small number of events, or both. The rates based on small numbers may be questionable due to chance factors and should be used with caution. Rates for counties with small populations also may vary considerably from year to year. In addition, one must make allowances for differences in age distributions, etc., when rates are not adjusted, as is the case in the Vital Statistics portion of this report. Caution must be exercised when forming conclusions on the basis of crude or non-adjusted rates.

DEFINITIONS

Occurrence - Place where the event actually occurred.

Residence - Usual place of residence for person to whom event occurred. For births and fetal deaths, residence is defined as the mother's usual place of residence.

Births

Total Births - Total live births.

Live Birth - The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy which, after such expulsion or extraction, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

Birth Weight - Weight of fetus or infant at time of delivery.

Low-Weight Birth - Birth wherein the birth weight is equivalent to 2,500 grams or less (approximately 5 lbs, 8 ozs.).

Birth Rates

Birth Rate - Number of live births per 1,000 population

Age Specific Birth Rate - Number of live births to women in specific age group per 1,000 estimated female population in that age group

Low-Weight Birth Rate - Number of live births weighing less than 2,500 grams (5lbs, 8ozs) per 1,000 live births

General Fertility Rate - Total number of live births per 1,000 women of child bearing age (15 - 44 years)

Total Fertility Rate - The sum of each age-specific live birth rate multiplied by the number of years in the age group

Deaths

Underlying Cause of Death - That condition giving rise to the chain of events leading to death. All causes of death are coded in accordance with the International Classification of Diseases, ninth revision adapted for the use in the United States (ICD).

Fetal Death - Death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy. The death is indicated by the fact that after such expulsion or extraction the fetus does not breathe or show any evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Neonatal - Deaths occurring to an individual of less than 28 days of age.

Postneonatal - Deaths occurring to an individual 28 days of age or more but under one year of age.

Infant Death - Death occurring to an individual of less than one year of age.

Death Rates

Death Rate or Crude Death Rate - Number of deaths per 1,000 population

Cause-Specific Death Rate - Number of deaths from a specific cause per 100,000 population

Age-Specific Death Rate - Number of deaths in a specific age group per 100,000 population in that age group

Age-Adjusted Death Rate - Total mortality and cause - specific death rates are age-adjusted by multiplying the mortality rate for each age group within a population grouping by the population of that age group within a standard population. The standard population used was the population of the United States in 1940. The sum of these results for each of these age groups for a given population is the age-adjusted rate. The age-adjusted rate is expressed as a rate per 100,000 population.

Fetal Death Rate - Number of reportable fetal deaths per 1,000 live births

Infant Death Rate - Number of deaths under one year of age per 1,000 live births

Neonatal Death Rate - Number of deaths under 28 days of age per 1,000 live births

Postneonatal Death Rate - Number of deaths between 28 days of age and one year of age per 1,000 births

Ethnicity - In previous years, persons of Spanish/Hispanic origin were classified as "White." However, the Arizona birth and death certificates record Hispanic origin for all races which permits more detailed differentiation of persons classified as "White," "Black," "Native American" or "Asian" into two groups: those who simultaneously are - or are not - of Hispanic origin for each race.

Starting in 1978, Yaqui Indians were no longer classified as White but Native American. The Native American figures include those living both on and off the reservation.

For purposes of statistical classification, entries of "unknown" and "not specified" race/ethnicity on birth or death certificates are included, respectively in the natality or mortality data as "White." Ethnicity of mother, father or descendant is as stated on certificate. Ethnicity of child is determined from ethnicity of the parents.

CLASSIFICATION OF CAUSE OF DEATH

In tabulation presented in this report, the cause of death is the underlying cause classified according to the International Statistical Classification of Diseases, Injuries, and Causes of Death.

Listed below are categories, International Classification of Disease codes, and examples for selected causes of mortality discussed in this report. Numbers after causes of death are category numbers (codes) based on ICD classification (Ninth Revision, 1975).

Cause of Death Category	ICD Code	Examples
Infectious and parasitic diseases	001-009, 020-088, 100-139	Tuberculosis, Septicemia, Viral hepatitis, Coccidioidomycosis (Valley Fever)
Malignant neoplasms	140-208	Lung Cancer, Leukemia, Breast Cancer, Colon Cancer
Diabetes mellitus	250	Diabetes with coma, Diabetes with ophthalmic manifestations, diabetes with renal manifestation
Alcoholism	291, 303, 571.0-571.3	Alcoholic psychoses, Alcohol dependence syndrome, Cirrhosis of liver

Cause of Death Category	ICD Code	Examples
Diseases of heart	390-398, 402, 404-429	Myocardial infarction, Hypertensive heart disease, Cardiomyopathy, Cardiac dysrhythmias
Cerebrovascular diseases (stroke)	430-438	Intracerebral hemorrhage, Occlusion of cerebral arteries
Atherosclerosis	440	Atherosclerosis of aorta, Atherosclerosis of renal artery
Other diseases of the arteries	441-448	Aortic aneurysm, Arterial Embolism and Thrombosis, Polyarteritis nodosa, Diseases of capillaries
Pneumonia and influenza	480-487	Viral pneumonia, Bronchopneumonia, Pneumococcal pneumonia, Influenza
Chronic obstructive pulmonary disease (COPD)	490-496	Bronchitis, Emphysema, Asthma, Bronchiectasis, Allergic alveolitis
Congenital anomalies	740-759	Heart defects, Anencephalus, anomalies of respiratory system, anomalies of central nervous system
Certain conditions originating in perinatal period	760-779	Maternal hypertensive disorders, slow fetal growth and fetal malnutrition, birth trauma, disorders relating to short gestation and low birthweight
Symptoms and ill-defined conditions	780-799	General symptoms, nonspecific abnormal findings, ill-defined and unknown causes of mortality
Sudden infant death syndrome	798.0	
Accidents	800-949	Poisoning, falls, motor vehicle accidents, fatalities due to natural and environmental factors
Motor vehicle	810-825	
Drowning	830, 832, 910, 984	
Suicide	950-959	
Homicide	960-969	

LIST OF HEALTH STATUS TABLES

Table	Section	Page
	NATALITY	15
1-1	Birth Rates by Arizona County of Residence, Arizona and United States, 1981-1986	19
1-2	General Fertility Rate, Total Fertility Rate and Age-Specific Live Birth Rates, Arizona, 1981-1986	20
1-3	Low-Birthweight Birth Ratios by County of Residence, Arizona, 1970-1986	21
	TOTAL MORTALITY	22
2-1	Trends in Age-Adjusted Mortality Rates in Arizona and the United States by the Ten Leading Causes of Death, 1981-1986	26
2-2	Total Age-Adjusted Mortality Rates For Leading Causes of Death by Gender, Arizona 1981-1986	27
2-3	Leading Causes of Death Ranked by Average Degree Male Mortality Rate Exceeds Female Mortality Rate in Arizona For 1980-1986	28
2-4	Highest and Lowest Age-Adjusted Mortality Rates for Ten Leading Causes Among Counties and Counties Which Exceed the U.S. Age-Adjusted Rate, 1986.	29
	INFANT MORTALITY	30
3-1	Infant Mortality Rates by County of Residence, Arizona and United States, 1950-1986	33
3-2	Infant, Neonatal and Postneonatal Mortality Rates and Percent Postneonatal Deaths, Arizona, United States, 1950-1986	34
3-3	Neonatal, Postneonatal and Total Infant Mortality by County of Residence With Rates, Arizona, 1986	35
3-4	Infant Mortality Rates for the Five Leading Causes of Death, Arizona, 1981-1986	36
	CHILDHOOD MORTALITY	37
3-5	Mortality Rates for the Five Leading Causes of Death Among Children (1-14 years) by Gender, Arizona, 1981-1986	39

3-6 Mortality Rates for the Five Leading Causes of Death Among Children (1-14 years) in Urban and Rural Areas, Arizona, 1981-1986 40

3-7 Mortality Rates Among Children (1-14 years) by Gender in Urban and Rural Areas, Arizona, 1981-1986 41

ADOLESCENT MORTALITY 42

3-8 Mortality Rates for the Five Leading Causes of Death Among Adolescents (15-19 years) by Gender, Arizona, 1981-1986 44

3-9 Mortality Rates for the Five Leading Causes of Death Among Adolescents (15-19 years) in Urban and Rural Areas, Arizona, 1981-1986 45

3-10 Mortality Rates Among Adolescents (15-19 years) by Gender in Urban and Rural Areas, Arizona, 1981-1986 46

MORTALITY OF YOUNG ADULTS 47

3-11 Mortality Rates for the Five Leading Causes of Death Among Young Adults (20-44 years) by Gender, Arizona, 1981-1986 49

3-12 Mortality Rates for the Five Leading Causes of Death Among Young Adults (20-44 years) in Urban and Rural Areas, Arizona, 1981-1986 50

3-13 Mortality Rates Among Young Adults (20-44 years) by Gender in Urban and Rural Areas, Arizona, 1981-1986 51

MORTALITY OF MIDDLE-AGED ADULTS 52

3-14 Mortality Rates for the Five Leading Causes of Death Among Middle-Aged Adults (45-64 years) by Gender, Arizona, 1981-1986 54

3-15 Mortality Rates for the Five Leading Causes of Death Among Middle-Aged Adults (45-64 years) by Urban and Rural Areas, Arizona, 1981-1986 55

3-16 Mortality Rates Among Middle-Aged Adults (45-64 years) by Gender in Urban and Rural Areas, Arizona, 1981-1986 56

ELDERLY MORTALITY 57

3-17 Mortality Rates for the Five Leading Causes of Death Among Elderly (65 years and older) by Gender, Arizona, 1981-1986 58

3-18 Mortality Rates for the Five Leading Causes of Death Among Elderly (65 years and older) by Urban and Rural Areas, Arizona, 1981-1986 59

3-19 Mortality Rates Among Elderly (65 years and older) by Gender in Urban and Rural Areas, Arizona, 1981-1986 60

SPECIAL SECTION: DEATHS FROM MAJOR RESPIRATORY CAUSES 61

4-1 Number of Days Exceeding the Standards of Air Quality by Area, 1984 - 1986' 66

4-2 Crude and Standardized or Age-Adjusted Adult Mortality Rates for Specific Causes by Geographic Areas, 1985 and 1986 67

4-3 Percent of Annual Deaths by Month and Cause and Pollution Status of Month, Phoenix, 1985, 1986 68

4-4 Chi-Square Between Phoenix Monthly Air Pollution Quality and Monthly Percent Contribution to Annual Deaths for Cause 69

MORBIDITY 73

5-1 Number of Reported Cases of Selected Notifiable Diseases by Category, 1981-1986 77

5-2 Arizona Residents Cases and Rates of Syphilis, Gonorrhea, and All STD's by Age, Gender and County, and Rates by County, Arizona, 1986 78

5-3A People Reported with AIDS and Who Later Died from AIDS by Year of Diagnosis, Arizona, 1981 - December 31, 1986 79

5-3B Risk Activities Engaged in by People with AIDS, ARC and Hiv Antibody Positive Tests by Gender, Maricopa County, 1981 - October 30, 1987 79

LIST OF VITAL STATISTICS TABLES

Table	Section	Page
	POPULATION STATISTICS	86
6-1	Estimated Population by County of Residence, Arizona, 1980-1986	87
6-2	Estimated Population by Age and Gender, and County of Residence, Arizona, 1986	88
	BIRTH STATISTICS	89
7-1	Rates of Natural Increase from Births per 1,000 Population, by County of Residence, Arizona and United States, 1981-1986	90
7-2	Births by County of Residence, Arizona, 1950-1986	91
7-3	Births by County of Occurrence, Arizona, 1950-1986	92
7-4	Resident Births by Month of Occurrence, Arizona, 1975-1986	93
7-5	Births to Arizona Residents Occurring in Arizona by County and Month, Arizona 1986	94
7-6	Births by Mother's Age Group and County of Residence, Arizona, 1986	95
7-7	Resident Births by Mother's Race and Age Group, Arizona, 1983-1986	96
7-8	Resident Live Births by Mother's Ethnicity and Age Group, Arizona, 1986	97
7-9	Births by Mother's County of Residence and Education, Arizona, 1986	98
7-10	Births by County of Residence of Mother, Race and Sex of Child, Arizona, 1986	99
7-11	Hispanic Births by County of Residence of Mother, Race and Sex of Child, Arizona, 1986	100
7-12	Low-Birthweight Births by County of Residence, Arizona, 1970-1986	101
7-13	Low-Birthweight Births by Mother's Age Group and County of Residence, Arizona, 1986	102

7-14 Low-Birthweight Births by Mother's Ethnicity and Age Group, Arizona, 1986 103

7-15 Birth Ratios of Low-Birthweight Babies by Mother's Ethnicity and Age Group, Arizona, 1986 104

7-16 Distribution of Low-Birthweight Births and LBW Risk by Amount of Prenatal Care and County of Residence, Arizona, 1986 105

7-17 Births to Unwed Mothers by Mother's County of Residence and Age Group, Arizona, 1986 106

7-18 Births to Unwed Mothers by Mother's County of Residence, Race and Education, Arizona, 1986 107

7-19 Births with Congenital Anomalies Mentioned on Birth Certificate by County of Residence, Arizona, 1986 108

7-20 Births with Congenital Anomalies Mentioned on Birth Certificate by Ethnic Group and Sex of Child, Arizona, 1986 109

7-21 Frequency Distribution of Births by Amount of Prenatal Care and County of Residence, Arizona, 1986 110

7-22 Frequency Distribution of Births by Mother's Age Group and Race and Trimester of Pregnancy Prenatal Care Began, Arizona, 1986 111

DEATH STATISTICS 112

8-1 Mortality by County of Residence, Arizona, 1950-1986 113

8-2 Mortality Rates by County of Residence, Arizona, 1950-1986 114

8-3 Mortality by County of Occurrence, Arizona, 1950-1986 115

8-4 Resident Mortality by Month of Occurrence, Arizona, 1970-1986 116

8-5 Mortality by Five-Year Age Groups and County of Residence, Arizona, 1986 117

8-6 Mortality by County of Residence, Race and Gender, Arizona, 1986 118

8-7 Hispanic Mortality by County of Residence, Race and Gender, Arizona, 1986 119

8-8 Fetal Mortality by County of Occurrence, Arizona, 1950-1986 120

8-9 Fetal Mortality Rates by County of Occurrence, Arizona, 1950-1986 121

8-10 Fetal Morality by County of Occurrence, Race and Sex of Child, Arizona, 1986 122

8-11 Infant Mortality by County of Residence, Arizona, 1950-1986 123

8-12 Infant Mortality Rates by Age and Selected Causes, Arizona, United States, 1986 124

8-13 Infant Mortality by County of Residence, Race and Gender Arizona, 1986 125

8-14 Hispanic Infants Mortality by County of Residence, Race and Gender, Arizona, 1986 126

8-15 Infant Mortality Rates by County of Residence, Ethnic Group and Gender, Arizona, 1986 127

8-16 Neonatal Mortality by County of Residence, Arizona, 1950-1986 128

8-17 Neonatal Mortality Rates by County of Residence, Arizona, United States, 1950-1986 129

8-18 Selected Causes of Mortality by County of Residence, Arizona, 1986 130

8-19 Rates for Selected Causes of Mortality by County of Residence, Arizona, United States, 1986 131

8-20 Percent of Total Deaths for the 15 Leading Causes of Mortality, Arizona, United States, 1986 132

MARRIAGE AND DIVORCE STATISTICS 133

9-1 Marriages by County of Occurrence, Arizona, 1950-1986 134

9-2 Marriage Rates by County of Occurrence, Arizona, United States, 1950-1986 135

9-3 Dissolutions of Marriage by County of Occurrence, Arizona, 1950-1986 136

9-4 Dissolutions of Marriage Rates by County of Occurrence, Arizona, United States, 1950-1986 137

ABORTION STATISTICS 138

10-1 Induced Abortions to Arizona Residents by County of Residence, Arizona, 1977-1986 139

10-2 Characteristics of Women Receiving Abortions, Arizona, 1981-1986 140

10-3 Birth Rates and Abortion Rates by Age Group, Arizona, 1981-1986 141

10-4 Number of Women Having Abortions per 1,000 Women Giving Birth, Arizona, 1981-1986 142

10-5 Live Births, Fetal Deaths and Abortions by County of Residence, Arizona, 1986 143

10-6 Abortions by Age and County of Residence, Arizona, 1986 144

10-7 Births, Fetal Deaths and Abortions to Teens by County of Residence and Age Group, Arizona, 1986 145

10-8 Abortions by Weeks of Gestation and Age, Arizona Residents, 1986 146

LIST OF FIGURES 70

4-1 Number of Comparisons by Cause in Which Standardized Mortality Rate Ratios for Phoenix, Tucson SMSA and Rural Counties are Higher or Lower than Contrast Areas, 1985 and 1986 70

4-2 Percent of Days Each Month with CO Rate Exceedances, Phoenix, 1985 - 1986 71

4-3 Seasonal Variation in CO Pollution Exposure and Respiratory Mortality by Cause, Phoenix, 1985 - 1986 72

PART I: HEALTH STATUS

NATALITY

Nearly 61,000 babies were born in Arizona in 1986, the sixth consecutive annual increase seen in the number of live births in this decade. Despite this increase in the number of infants born, the birth rate was slightly lower in 1986 than in 1985 (18.1 versus 18.6 respectively). While both Arizona and the United States showed declining birth rates in the past year, Arizona's birth rate still was 16 percent greater than the nation's as it was in 1981 (Table 1-1).

Arizona and the nation were also similar in that the fertility rate dropped about two percent between 1985 and 1986. However, the 1986 U.S. fertility rate of 64.9 live births per 1,000 women aged 15-44 years was the lowest ever observed in the nation.[1] In contrast, the 1986 fertility rate of 78.2 for Arizona women not only was 20 percent higher than the national rate but also was the fourth highest annual rate in the state over the last six years (Table 1-2). In addition, Arizona recorded sufficient growth (3.5 percent) in the number of women in the childbearing ages to compensate for the two percent decline in the fertility rate so its number of births further increased between 1985 and 1986. Nationally, births decreased because the increase (1 percent) between 1985 and 1986 in the childbearing population was not enough to compensate for the declining fertility rate.[1]

Over the past six years, significant consistencies and changes were noted in the relative position of Arizona counties in their birth rates (Table 1-1). Maricopa County showed the most noteworthy change in the ranking of birth rates among counties by moving from eleventh highest in 1981 to sixth highest in 1986. Between 1981 and 1984, the birth rate in Maricopa County was below the statewide rate; in 1985 and 1986 it was above the state's rate. In fact, Maricopa and Yuma were the only counties with higher birth rates in 1986 than in 1981.

The first and second highest county birth rates annually always were noted for Apache and Navajo counties respectively in the last six years. In that time period, the birth rate for Greenlee county fell precipitously from third highest in 1981 to the lowest rate in 1986. For the first time over these years, Greenlee county now had a birth rate (11.1) considerably below the national rate (15.5). Yavapai County's annual birth rate has been consistently lower than the U.S. rate but the percent difference widened twofold in 1985 and 1986. Mohave County's birth rate also fell at least ten percent below the U.S. rate in the past two years. The trends in these three rural counties suggest that population growth due to natural increase, which replenishes the childbearing and working population, either is falling progressively behind population growth due to external factors such as in-migration of retirees or is diminishing because of selective out-migration of the childbearing population.

A total fertility rate of 2,110.0 is considered necessary for a given generation to exactly replace itself in the population and Arizona exceeded this rate in 1986 as it did in 1985 and 1982 (Table 1-2). This rate means that if 1,000 Arizona women experienced the age-specific birth rates reported in 1986 over their childbearing lifetime, they would be expected to bear 2,159 children or 2.2 children per women. In comparison, the 1985

1 National Center for Health Statistics. Annual summary of births, marriages, divorces, and deaths, United States, 1986. Monthly Vital Statistics Report. Vol. 35, No. 13. DHHS Pub. No. (PHS) 87-1120. Public Health Service, Hyattsville, MD, August 24, 1987.

national total fertility rate of 1,842.5 was below the replacement level[2], and it should be even further below replacement level in 1986 given the decline in births.[a]

Since Arizona exceeds the nation in overall birth, fertility and total fertility rates, substantial differences were expected between the two in the birth rates of women of different ages (age-specific birth rates[a]; Table 1-2). The birth rates of Arizona teenagers between 15 to 19 years (66.7), women aged 20 to 24 (142.9), and women aged 40 to 44 (5.2) were 30 percent greater than the birth rates of their respective aged national peers (rates of 51.3, 108.9 and 4.0 respectively). Exceedances of six to eight percent were seen in the birth rates of Arizona relative to U.S. girls less than 15 years old, women 25 to 29 years, and women 30 to 34 years of age. No difference existed in birth rates between Arizona and U.S. women who were 35 to 39 years of age or over 44 years old. Overall, six of eight age-specific birth rates were higher for Arizona women than their national peers. Moreover, to see national age-specific birth rates at least equal to Arizona's 1986 rates, one has to go back to the first half of the 1970's.[2]

Two age groups in Arizona recorded their highest birth rate of the past six years in 1986: girls under 15 years of age and women 30 to 34 years old. The birth rate to girls who have not reached mid-adolescence had been steadily declining since 1982 when it suddenly peaked in 1986. In contrast, women in their early thirties had a steady birth rate between 1981 and 1983 which then steadily increased each year thereafter. The only age group of women who showed the lowest birth rate of the past six years in 1986 were those 35 to 39 years of age.

The babies born to Arizona women in 1986 compared to 1985 were at slightly lower risk (less than 1 percent) for morbidity and mortality due to a small decline in the low birthweight (LBW) ratio to 62.2 from 62.5 (Table 1-3). This ended the three-year annual increase in LBW ratios which began in 1983. However, statewide the risk conferred to infants by LBW was 3.4 percent higher in 1986 than in 1981. Yet, despite the proportional decline in the last year, the number of LBW infants was two percent higher in 1986 than 1985. The unprecedented number of 3,785 LBW babies born in Arizona in 1986 is a more practical indicator than the ratio of the at risk population of newborns requiring intervention. Costly medical and social service programs are required to minimize the risk to these newborns of neonatal, infant or pediatric death and to reduce the life-long developmental consequences of their birth.

The trend in LBW babies becomes bleaker when attention is focused on Maricopa county — the county which always accounts for the majority of births, accounted for a larger proportion of births in 1986 than 1981, and was one of only two counties which had a higher birth rate in 1986 than 1981. The 1986 LBW ratio for Maricopa County was 5.5 percent higher than the 1981 LBW ratio and was the highest ratio of the last six years. In fact, one must regress to 1975 to see a LBW ratio higher than the 1986 ratio for this county.

The other metropolitan county, Pima, showed a more positive trend in LBW ratios. The LBW ratio in 1986 was not only lower than the 1981 ratio but also was the third lowest

2 National Center of Health Statistics. Advance report of final natality statistics, 1985. Monthly Vital Statistics Report. Vol. 36, No. 4 Supp. DHHS Pub. No. (PHS) 87-1120. Public Health Service, Hyattsville, MD, July 17, 1987.

a The 1986 total fertility rate and age-specific birth rates for the U.S. were unavailable when this report was prepared, so 1985 rates were used.

ratio over the last 17 years. Small numbers (less than 150) of LBW newborns are delivered in each of the rural counties, so ratios based on them are less reliable. This results in erratic trends which are difficult to interpret. For the three rural counties with at least 100 LBW infants delivered in each of the six years (Apache, Navajo and Pinal), opposing trends in LBW ratios over that time were seen. The 1986 LBW ratios for women giving birth in Apache and Pinal counties were 13.2 and 6.3 percent higher respectively than the 1981 ratios and the second highest ratio in the past six years. Women giving birth in Navajo county, in contrast, were 12.1 percent less likely to deliver a LBW infant in 1986 than in 1981; yet the 1986 ratio was the second highest ratio of the last six years.

The LBW ratio for white mothers in 1986 was identical to their ratio in 1985 (6.0) and hence remained higher than the national LBW ratio for whites (5.6).[3] The LBW ratio rose between 1984 and 1985 but incongruently the proportion of mothers who received less than five prenatal visits during pregnancy declined in that year. Conversely, the slight decline in LBW ratio in 1986 relative to 1985 was accompanied by the incongruency of a slight rise in the proportion of women receiving less than five prenatal visits (percents of 8.4 and 8.0 in 1986 and 1985 respectively).

Earlier work[4] projected that the proportion of births to unmarried mothers in Arizona would steadily increase each year between 1981 and 1990, so that an increase of 38 percent would accumulate by 1990. In 1986, four years short of 1990, a 32 percent increase in the proportion of births to single mothers had already occurred relative to 1981. A single year increase of 7.5 percent rather than the estimated 4.2 percent was seen in the proportion of births to unmarried women between 1986 (25.6 percent) and 1985 (23.8 percent). The increasing proportional contribution of single mothers to annual births appears to be preceding at a faster rate than initially predicted. For this reason, it is not surprising that Arizona maintains both its rank as one of the top 15 states in the percent of births to single mothers of all races and its rank as one of the top three states in the percent of babies born to unmarried white mothers.[5]

One out of three single mothers in 1986 was a teenager and another 37.4 percent was a woman in her early twenties. Adolescents up to 19 years of age are more likely to be single (62 percent) than married when they deliver a baby. Non-Hispanic whites accounted for 47 percent of the births to teenagers. Hispanics of all races accounted for an additional 35 percent of the adolescent mothers, but 96.8 percent of adolescent Hispanic mothers viewed their racial identification as white. Native American non-Hispanics had double the proportional representation (12 percent) among teenaged mothers than Black non-Hispanics (6 percent).

3 See report referenced in footnote #2.

4 Gersten, J.C., Teitelbaum, F., and Chapin, C. Risk factors for low birthweight babies: The Arizona experience, 1969 to 1983. Research Notes, Arizona Department of Health Services, Vol. 1, No. 1, March 1985.

5 See report referenced in footnote #2.

A recent report[6] ranked the fertility rate of Arizona teenagers[b] in 1980 as the twelfth highest among the 50 states and the District of Columbia. Given that the 1980 fertility rate of adolescent girls was lower than the 1986 rate, the situation of births to teenage girls has not improved but worsened. That report also estimated the rate of unintended fertility for teenaged females and the number of unintended babies delivered by adolescent mothers in 1980. At the start of this decade, teenage girls in Arizona were 24 percent more likely to deliver an unintended baby than their national peers. By 1986 the gap widened between Arizona and national teenagers, with adolescent girls in this state now 30 percent more likely to have an unintended birth than girls across the U.S.[c] Moreover, the 1986 unintended fertility rate of 46.3 for teenagers in Arizona was only ten percent lower than the total fertility rate (both intended and unintended births) for adolescent females nationwide (51.3). Thus, despite the fact that fewer adolescent girls comprised Arizona's population in 1986 than 1980, the worsening fertility picture for these girls meant that they birthed a greater number of unintended babies in 1986 than 1980. More than 5,700 unintended infants were delivered to teenaged girls in 1986.

6 Centers for Disease Control: Teenage Pregnancy and Fertility in the United States: 1970, 1974, 1980. Regional and State Variations and Unintended Fertility, August 1987.

b Girls 15 to 19 years of age.

c The proportionality between intended and unintended fertility estimated for 1980 was applied to the 1986 rates.

TABLE 1-1

BIRTH RATES[1] BY ARIZONA COUNTY OF RESIDENCE,
ARIZONA AND UNITED STATES 1981-1986

AREA	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
Apache	32.0	33.1	31.4	34.9	32.9	29.0	-11.8
Cochise	18.5	17.3	17.2	17.7	16.2	15.6	- 3.7
Coconino	21.6	21.2	22.2	22.0	22.6	20.5	- 9.3
Gila	20.2	21.2	17.5	17.7	16.8	15.7	- 6.6
Graham	21.9	19.6	18.0	18.6	17.4	16.1	- 7.5
Greenlee	24.7	19.5	15.4	17.1	18.5	11.1	-40.0
Maricopa	17.9	17.8	17.6	17.7	18.8	18.5	- 1.6
Mohave	15.6	15.5	15.5	15.2	13.3	13.8	+ 3.8
Navajo	26.2	26.6	26.5	26.3	26.2	25.6	- 2.3
Pima	16.6	16.1	16.5	16.0	16.5	16.2	- 1.8
Pinal	20.3	20.5	19.3	18.8	20.5	19.8	- 3.4
Santa Cruz	24.5	22.3	20.6	22.8	19.3	18.3	- 5.2
Yavapai	14.3	14.8	14.0	12.3	12.4	12.3	- 0.8
Yuma[2]	21.3	20.0	20.1	20.4	21.8	22.4	+ 2.7
La Paz	NA	NA	17.3	14.5	16.3	15.2	- 6.8
ARIZONA	18.4	18.2	18.0	17.9	18.6	18.1	- 2.3
U.S.	15.9	16.0	15.5	15.7	15.7	15.5	- 1.3

1 Rates are presented per 1,000 population.
2 La Paz County included in Yuma County, 1980-1982.

SOURCE: U.S. data from the National Center for Health Statistics; 1986 data are provisional.

TABLE 1-2

GENERAL FERTILITY RATE,* TOTAL FERTILITY RATE,** AND AGE-SPECIFIC LIVE BIRTHS RATES,***

ARIZONA, 1981-1986

YEAR	GENERAL FERTILITY RATE	TOTAL FERTILITY RATE	AGE-SPECIFIC BIRTH RATES BY AGE OF MOTHER							
			UNDER 15	15-19	20-24	25-29	30-34	35-39	40-44	45 AND OVER
1981	79.0	2,099	1.1	65.8	134.9	119.7	67.9	24.9	5.3	0.2
1982	78.7	2,119	1.2	67.4	137.0	119.9	67.5	25.5	5.0	0.4
1983	77.1	2,078	1.1	65.9	132.8	117.2	67.6	25.6	5.2	0.3
1984	77.2	2,098	1.0	63.6	137.4	116.7	70.1	25.5	5.0	0.3
1985	79.6	2,190	0.9	67.0	144.8	118.8	73.8	27.0	5.5	0.2
1986	78.2	2,159	1.3	66.7	142.9	117.8	74.1	23.7	5.2	0.2

* The general fertility rate is the total number of live births per 1,000 women of childbearing age.

** The total fertility rate is the sum of each age-specific live birth rate multiplied by the number of years in the age group (five years in this case).

*** The age-specific live birth rate is the number of live births per 1,000 women in a specific age group. For women under 15, the rate is calculated using the female population 10-14 years of age. For women over 44 the rate is calculated using the female population 45-49 years of age.

TABLE 1-3

LOW-BIRTHWEIGHT BIRTH RATIOS* BY COUNTY OF RESIDENCE
ARIZONA, 1970-86

County of Residence	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
ARIZONA	73.8	69.4	69.8	65.3	67.0	64.8	62.7	62.1	62.5	61.1	61.7	60.1	58.4	60.5	61.3	62.5	62.2
Apache	74.5	67.8	71.8	79.6	68.8	64.9	63.1	65.5	78.2	58.2	60.2	64.8	63.4	62.1	60.0	73.9	73.4
Cochise	83.6	65.5	74.8	71.9	78.1	87.0	69.6	79.8	73.5	79.0	72.6	74.1	71.4	90.1	77.3	66.7	57.1
Coconino	88.8	91.2	63.9	74.4	75.0	69.1	57.3	66.2	61.7	71.6	61.4	64.6	54.3	66.4	62.3	67.8	61.8
Gila	53.4	94.6	72.1	75.6	76.2	69.1	91.6	76.2	65.4	67.7	53.9	44.7	66.7	45.4	61.0	56.1	80.0
Graham	102.4	55.1	57.4	44.1	64.4	68.4	67.6	47.8	52.0	56.4	54.7	84.5	47.0	46.0	29.2	71.4	73.4
Greenlee	73.3	46.1	92.5	81.9	93.5	57.2	96.7	53.2	58.4	45.6	51.5	50.2	43.0	54.1	51.3	43.5	37.7
La Paz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	105.9	51.3	68.4	83.7
Maricopa	73.4	69.9	66.7	63.9	65.3	64.7	61.1	60.8	59.4	60.2	60.8	59.9	57.9	58.9	62.8	62.0	63.2
Mohave	55.9	64.5	65.5	83.7	86.9	73.4	71.1	71.2	79.2	62.2	66.6	53.0	81.3	56.2	66.8	53.7	68.5
Navajo	81.5	69.3	74.4	69.5	64.3	75.4	56.5	67.9	66.5	62.5	62.1	66.6	50.5	53.4	57.4	57.5	58.5
Pima	72.3	66.2	74.6	61.9	63.0	59.6	64.2	61.3	63.7	62.8	62.6	60.1	55.8	61.8	58.1	63.2	58.2
Pinal	70.1	64.2	78.0	71.4	69.9	67.8	62.3	62.0	71.2	64.7	67.4	63.2	72.5	61.0	55.7	66.9	67.2
Santa Cruz	64.0	73.5	49.2	65.8	68.0	49.9	35.9	42.4	52.3	54.2	66.1	40.5	65.2	52.5	31.3	87.9	69.4
Yavapai	57.1	70.8	69.3	72.9	72.0	52.3	72.4	55.1	60.1	53.8	60.8	50.1	61.9	70.7	72.1	63.4	54.9
Yuma	73.2	64.2	75.3	55.0	69.8	55.3	62.5	59.3	59.2	49.2	60.2	49.4	48.9	55.9	58.8	47.4	49.3

* Per 1,000 live births

TOTAL MORTALITY

Total age-adjusted mortality for both the U.S. and Arizona was at its lowest rate of the past six years in 1986 (Table 2-1). The decline over the six years in the national total mortality rate consistently occurred from year to year and was 1.6 times greater than the decline seen for Arizona. In those six years, nearly 140,000 Arizona residents died, with diseases of the heart responsible for 33.1 percent of the deaths, malignant neoplasms 22.2 percent, and accidents and cerebrovascular disease each accounting for 6.2 percent. Chronic obstructive pulmonary disease was the responsible cause for 5.1 percent of the fatalities, pneumonia/influenza for 3.0 percent, suicide for 2.2 percent, and each of the remaining leading causes was implicated in less than two percent of the deaths.

The mortality advantage of Arizona residents relative to their U.S. peers with regard to heart disease was just as great in 1986 as it was in 1981 (9.9 and 9.3 percent lower, respectively). State and national mortality rates from heart disease decreased comparable amounts over the six years (10.6 and 10.0 percent respectively), continuing the trend of lower mortality from this disease generally seen for about the last 35 years.[7] A less favorable six-year picture appeared for statewide mortality from malignant neoplasms or cancers. In 1981, Arizona residents were 9.6 percent less likely to die from cancer than their national counterparts, but by 1986 the difference between the two cancer mortality rates had been halved (4.8 percent). The 50 percent reduction in cancer mortality advantage for Arizona residents occurred because the national rate remained quite steady over the six years while the Arizona rate increased in small but steady yearly increments. In 1986, the cancer mortality rate for Arizona was 5.0 percent higher than in 1981 and the highest rate of the past six years.

While the mortality advantage of Arizona residents compared to their national counterparts for cerebrovascular diseases also became smaller, going from 16.2 percent lower in 1981 to 9.5 percent lower in 1986, it was accompanied not by an increase but a decrease in rates. However, the decline of 13.8 percent between 1981 and 1986 in the Arizona rate of death from stroke was one-third less than the 20.2 percent decline recorded nationally. In 1986, the Arizona age-adjusted mortality rate from stroke, the lowest of the past six years, was virtually identical to the mortality rates from chronic obstructive pulmonary disease (COPD) and motor vehicle accidents (rates of 27.5, 27.6 and 27.9 respectively).

The fact that a person is equally likely to die in a vehicular accident, from COPD, or from a stroke has never been seen before in Arizona and does not hold across the nation. Moreover, Arizona residents in 1986 still were at least 41 percent more likely to die in a motor vehicle crash or from COPD than their national counterparts as they were in 1981. The mortality rate due to vehicular collisions was at its lowest level of the past six years for both Arizona and the U.S. in 1983. Both rose thereafter but fortunately did not return to the 1981 level.

In contrast, the 1986 death rate for COPD did exceed the U.S. and state 1981 rates by 13.4 and 10.4 percent respectively. Increased mortality risks in 1986 relative to 1981 for pneumonia/influenza and suicide were also seen in both the nation and the state.

7 National Center for Health Statistics. Annual summary of births, marriages, divorces, and deaths, United States, 1986. Monthly Vital Statistics Report, Vol. 35, No. 13. Public Health Service, Hyattsville, Md., August. 24, 1987.

However, the increases in Arizona's suicide and pneumonia/influenza death rates over the six years were nearly twice as great as the national increases. The larger increases coupled with the fact that Arizona already exceeded the U.S. in these death rates in 1981 resulted in an even larger discrepancy by 1986. Arizonans in 1986 were 48 percent more likely to kill themselves and 22 percent more likely to succumb to pneumonia/influenza than their national counterparts.

The cause of death which showed the largest one-year decrease in mortality rate between 1985 and 1986 was alcoholism. The alcoholism death rate dropped 19 percent in that year to the lowest rate of the past six years, fully 28.9 percent below the 1981 rate. The second largest one-year decline among the mortality rates of the leading causes was seen for atherosclerosis, which fell 8.6 percent to the lowest level of the time period. However, that decline could not compensate for the 30.7 percent drop in the national death rate for atherosclerosis, so the Arizona and the U.S. rates were more divergent in 1986 than 1981. Specifically, the Arizona atherosclerosis mortality rate went from a ten percent elevation over the U.S. rate in 1981 to a 47 percent elevation in 1986. Conversely, the U.S. and Arizona death rates from diabetes were less discrepant in 1986 than 1981 and now were nearly identical, due to a small decline nationally and an increase in the state between 1981 and 1986.

Nationally, both men and women experienced a decline in total age-adjusted mortality over the six years but only males did in Arizona (Table 2-2). The 5.1 percent drop in total mortality for Arizona men nearly matched the 6.1 percent decrease recorded for U.S. males. However, the female decline in total mortality nationally occurred with a simultaneous slight increase in total mortality for Arizona women. Moreover, no improvement over the 1981 female mortality rate has been seen in Arizona in any year since. These opposing trends for the two genders in Arizona resulted in Arizona males retaining a mortality advantage relative to their national peers while Arizona's females were now disadvantaged by 3.6 percent relative to their national counterparts.

When the twelve causes responsible for the greatest number of deaths over the six years are ranked for the two genders, only three causes have identical ranks for both men and women. Heart disease, cancer, and COPD are the first, second and fourth leading causes of death respectively for both. The cause with the greatest discrepancy in rank between the two genders is atherosclerosis, being the twelfth leading cause for men but the eighth leading cause for women. The ranking of suicide, alcoholism, homicide, and diabetes each differ by three positions between men and women. The three causes involving greater behavioral determinants, i.e., suicide, alcoholism, and homicide, are ranked higher for men, while diabetes, a disease with fewer psychosocial correlates, is ranked higher for women. Due to the large differences in ordinal position of these five causes between men and women, the Spearman correlation for the twelve leading causes of death between the two genders over the six-year period was only 0.78.

Men and women were similar not only in the relative standing of heart disease, cancer and stroke as leading causes of death but also in the six-year trends in mortality risk for those diseases. The reduction in mortality risk from stroke for men and women was virtually equivalent (13.8 and 13.4 percent respectively) and nearly so for heart disease (11.7 and 8.4 percent respectively). In contrast, the worsening mortality risk from cancer was almost three times greater for women than for men (8.7 and 3.0 percent respectively). In keeping with these trends, the 1986 mortality rates of both men and women were at their lowest level of the past six years for heart disease and stroke and at their highest level for cancer. Both genders also had their lowest death rates of the last six years from alcoholism and atherosclerosis due to substantial declines in each cause of death for each sex.

The genders also were consistent in worsening mortality from pneumonia/influenza, diabetes, and infectious and parasitic diseases. However, in every instance, the increase in mortality rate over that time period was always greater for women than for men. The rise in mortality risk for women compared to men was 2.5 times greater for pneumonia/influenza, 2.3 times greater for diabetes, and 1.6 times greater for infectious and parasitic diseases.

Time trends in mortality risk were most discrepant between men and women for COPD, motor vehicle accidents, suicide and homicide. Accidents which either did or did not involve a motor vehicle claimed men's lives at rates that were at least 15.4 percent lower in 1986 than 1981 so the overall accident mortality rate fell a substantial 17.6 percent. In contrast, females died in vehicular accidents in 1986 at their highest rate of the last six years, while the mortality rate due to other accidents fell 12.0 percent to its lowest level of that time period. These opposing trends in the two major components of the accidental death rate wiped out the gain in survival from accidental death which females had between 1983 and 1985 so that their 1986 rate was a mere three percent lower than the 1981 rate.

Men elected to take their own lives at a rate that was 13.8 percent higher in 1986 than 1981 while the suicide risk of females remained constant. In contrast, constancy for males was seen in their 1986 and 1981 death rates from COPD while the female death rates from these respiratory diseases increased a substantial 30.8 percent. Both males and females were no more likely to be murdered in 1986 and 1981 but the homicide death rate of males was at its second highest level of the past six years.

Demise by one's own or another's hand occurs at a rate three times greater for men than women, the largest differential noted among the causes of death between the genders (Table 2-3). Indeed, females are no more likely to die from any of the twelve leading causes of death than are males; males are always the relative disadvantaged gender group. After suicide and homicide which most differentiate the genders, follow accidents, alcoholism and COPD. At least 2.6 men will die from each of these causes for every one women who does. The gender ratio falls below two but is still above 1.5 for heart disease and pneumonia/influenza. It declines further to below 1.5 for cancer and infectious parasitic diseases and disappears altogether for diabetes, stroke and atherosclerosis.

All fifteen counties in Arizona recorded at least 20 deaths from cancer and at least 13 deaths from heart disease in 1986. All of the other leading causes of death claimed fewer than ten lives in two or more counties, with homicide and atherosclerosis accounting for this few deaths in eleven counties in 1986. Thus, all fifteen counties could only be compared with respect to the mortality risk from heart disease and cancer. Apache county had the lowest age-adjusted mortality rates from both of these causes; its heart disease rate was 1.6 times lower than Gila County's highest rate and its cancer rate was 1.8 times lower than Greenlee County's highest rate (Table 2-4). Gila County's heart disease mortality rate usually has exceeded the national rate and did so again in 1986 by 22 percent. Pinal County not only exceeded the national heart disease death rate but also the national cancer death rate. The latter phenomenon also occurred for Greenlee, Mohave and Navajo Counties.

All counties which could be compared on accident mortality rates exceeded the U.S. rate. In other words the lowest ranked county in terms of its accident death rate (Yavapai) was still above the U.S. accident death rate. For every one person who died in an accident in Yavapai County, 3.6 residents of Apache County died, with 70 percent of them involved in a vehicular fatality. Suicide resembled accidents in that all counties

that could be compared did, in fact, exceed the national suicide death rate. Indeed, at least one county exceeded the national mortality rate for every one of the leading causes of death.

Given the degree to which counties' cause-specific rates were elevated above the respective national rate, it was not surprising that the majority or eight of the fifteen counties exceeded the U.S. total mortality rate. Seven of these counties were rural and one was metropolitan, i.e. Pima County. Pinal County's excessive total mortality stemmed from multiple causes, namely heart disease, cancer, accidents, COPD, suicide, homicide and diabetes. In contrast, Navajo and Apache Counties' excessive total mortality was primarily a function of accidents, with cancer, COPD and homocide of some significance for the former county and suicide and pneumonia/influenza of some importance for both. Mohave County had a negative profile on cancer, accidents, stroke, COPD and suicide. Heart disease was the prime contributor to Gila County's excessive total mortality rate, with accidents and COPD playing major secondary roles. Metropolitan Pima County slightly exceeded the total U.S. mortality rate largely because of accidents, COPD, suicide and homicide.

TABLE 2-1

TRENDS IN AGE-ADJUSTED MORTALITY RATES[1] IN ARIZONA AND THE UNITED STATES
BY THE TEN LEADING CAUSES OF DEATH[2], 1981-1986

CAUSE	1981		1982		1983		1984		1985		1986		Percent Change 1985-1986	
	AZ	U.S.	AZ	U.S.	AZ	U.S.	AZ	U.S.	AZ	U.S.	AZ	U.S.	AZ	U.S.
Diseases of heart	176.8	195.0	182.3	190.5	171.2	188.5	166.9	183.3	162.5	181.7	157.9	175.4	- 2.8	- 3.4
Malignant neoplasms	120.0	131.6	121.8	132.5	122.3	132.3	123.9	133.1	125.2	132.5	126.1	132.5	+ 0.7	0.0
Accidents and adverse effects	51.4	39.8	44.3	36.6	40.8	34.9	44.8	35.6	42.9	34.3	44.3	35.5	+3.2	+ 3.4
Motor vehicle	31.3	21.8	24.6	19.3	22.7	18.1	27.5	19.2	27.0	18.3	27.9	19.8	+ 3.3	+ 8.1
Other accidents	20.1	18.0	20.2	17.3	18.1	16.8	17.3	16.4	15.9	16.0	16.4	15.7	+ 3.1	- 1.8
Cerebrovascular diseases	31.9	38.1	30.7	35.8	31.0	34.3	31.9	33.9	29.1	32.3	27.5	30.4	- 5.4	- 5.8
Chronic obstructive pulmonary disease	25.0	16.3	24.2	16.2	24.7	17.6	26.4	18.0	26.3	18.6	27.6	18.5	+ 4.9	- 0.5
Pneumonia and influenza	13.9	12.3	14.3	10.9	12.7	11.2	16.2	12.2	15.0	13.2	16.6	13.6	+10.6	+ 3.0
Suicide	16.2	11.5	16.8	11.6	16.6	11.7	16.5	11.6	17.1	11.2	17.8	12.0	+ 4.0	+ 7.1
Diabetes	8.6	9.8	9.0	9.6	10.5	9.8	9.6	9.9	10.0	10.1	9.5	9.4	- 5.0	- 6.9
Alcoholism	11.4	*	10.7	*	9.0	*	10.8	*	10.0	*	8.1	*	-19.0	*
Atherosclerosis	5.8	5.2	5.6	4.8	5.7	4.5	5.8	4.1	5.8	4.0	5.3	3.6	- 8.6	-10.0
ALL CAUSES	560.6	568.2	570.6	553.8	547.3	549.6	552.0	547.7	544.2	545.9	543.6	540.2	- 0.1	- 1.0

1 Rates per 100,000 population.

2 Leading causes are those ten causes with the greatest number of deaths according to Arizona Vital Statistics for the 1981-86 period.

* Comparable categories not available.

Source: U.S. data furnished by the National Center for Health Statistics; 1986 data are provisional.

TABLE 2-2

TOTAL AGE-ADJUSTED MORTALITY RATES[1] FOR LEADING CAUSES OF DEATH[2]
BY GENDER IN ARIZONA, 1981-1986

CAUSE	1981		1982		1983		1984		1985		1986		Percent Change 1985-1986	
	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of heart	128.3	233.4	130.8	232.5	126.5	223.9	122.9	218.9	121.5	210.5	117.5	206.0	- 3.2	- 2.1
Malignant neoplasms	99.3	145.5	101.5	147.2	105.6	146.2	105.6	147.6	107.3	148.4	108.0	150.0	+ 0.6	+ 1.0
Accidents	26.2	77.1	25.6	63.9	23.9	60.1	23.6	66.4	23.9	62.3	25.4	63.5	+ 6.2	+ 1.9
Motor vehicle	16.2	46.6	13.8	34.7	12.3	33.2	14.3	40.0	14.3	40.0	16.5	39.4	+15.3	- 1.5
Other accidents	10.0	30.5	11.8	28.8	11.7	26.9	9.3	25.5	9.6	22.3	8.8	24.0	- 8.3	+ 7.6
Chronic obstructive pulmonary disease	14.6	38.0	14.1	36.8	15.9	35.7	17.3	37.6	18.9	35.9	19.1	38.4	+ 1.0	+ 6.9
Cerebrovascular disease	31.9	31.7	31.0	30.1	31.1	30.9	31.1	32.8	27.9	30.7	27.6	27.5	- 1.0	-10.4
Suicide	8.9	23.9	8.8	25.4	8.5	25.2	7.2	26.2	7.2	27.5	8.8	27.2	+22.2	- 1.0
Pneumonia and Influenza	11.8	18.1	11.2	18.0	9.7	16.4	13.1	20.1	12.5	18.0	14.2	19.6	+13.6	+ 8.8
Alcoholism	5.9	17.3	6.5	15.4	5.6	14.3	6.6	15.3	6.7	14.5	4.0	12.6	-40.2	-13.1
Homicide	4.8	15.7	4.0	14.7	3.5	13.5	4.2	13.5	4.6	11.8	4.7	15.0	+ 2.1	+27.1
Diabetes	7.9	9.5	8.6	9.3	9.9	11.3	8.8	10.5	9.6	10.7	8.4	10.8	-12.5	+ 0.9
Infectious and parasitic diseases	4.9	7.6	5.6	7.2	5.4	6.4	5.6	6.7	5.8	8.6	5.5	7.9	- 5.1	- 8.1
Atherosclerosis	5.9	5.7	5.6	5.6	5.7	5.6	6.2	5.2	6.0	5.5	5.2	5.0	-13.3	- 9.0
All Causes AZ	416.9	723.8	421.2	698.5	420.3	685.5	425.6	698.6	418.0	686.9	420.1	686.2	+ 0.5	- 0.1
All Causes U.S.	420.4	753.3	411.2	733.1	408.5	727.8	409.5	721.3	408.5	717.4	405.4	707.1	- 0.7	- 1.4

NOTE: 1985 U.S. data are provisional.

1 Rates are presented per 100,000 population.

2 Leading causes are those 12 causes with the greatest total number of deaths for males for the 1981 to 1986 time period.

TABLE 2-3

LEADING CAUSES OF DEATH RANKED BY AVERAGE DEGREE[a] MALE MORTALITY RATE EXCEEDS FEMALE MORTALITY RATE IN ARIZONA FOR 1980 - 1986

Males are more than 200% more likely than females to

Take their own lives (Suicide: 3.2)[b]
Be killed by another person (Homicide: 3.2)

Males are more than 100% but less than 200% more likely than females to die

In any type of an accident (All accidents: 2.7),
both those involving an automobile or other motor vehicle (Motor vehicle accidents: 2.7) and those involving fires, poisons, falls, drowning, etc. (Other accidents: 2.7)
From alcoholic cirrhosis or other alcohol-related diseases (Alcoholism: 2.6)
From chronic bronchitis or emphysema (chronic obstructive pulmonary disease: 2.6)

Males are more than 50% but less than 100% more likely than females to die from

A heart attack or other heart disease (Diseases of the heart: 1.8)
Pneumonia and/or influenza (1.8)

Males are more than 25% but less than 50% more likely than females to die from

Some kind of cancer (Malignant neoplasms: 1.4)
An infectious or parasitic disease (1.3)

Males are no more likely than females to die from

Diabetes (1.1)
A stroke or other cerebrovascular disease (1.0)
"Hardening of the arteries" or atherosclerosis (1.0)

a Degree is expressed by the mean gender ratio (male death rate/female death rate) for a cause across the years 1980 through 1986.

b The value in parentheses is the average or mean gender ratio for the seven years; a value of 1.0 indicates that the male and female mortality rates are the same.

TABLE 2-4

HIGHEST AND LOWEST AGE-ADJUSTED MORTALITY RATES FOR TEN LEADING CAUSES AMONG COUNTIES AND COUNTIES WHICH EXCEED THE U.S. AGE-ADJUSTED RATE, 1986

Cause	Counties with 10 deaths[a]	Highest Rate	County	Lowest Rate	County	Range	County(ies) U.S. rate ranked:[b]
ALL	None	714.1	Navajo	438.1	Santa Cruz	276.0	Navajo; Pinal; Apache; Gila; Mohave; Graham; La Paz; Pima
Diseases of Heart	None	192.6	Gila	117.0	Apache	75.6	Gila; Pinal
Malignant Neoplasms	None	177.0	Greenlee	98.0	Apache	79.0	Greenlee; Mohave; Pinal; Navajo
Total Accidents	Greenlee & Santa Cruz	128.1	Apache	35.9	Yavapai	92.2	Apache; La Paz; Navajo; Graham; Pinal; Mohave; Coconino; Gila; Yuma; Pima; Cochise; Maricopa; Yavapai
MVA	Greenlee & Santa Cruz	89.4	Apache	23.4	Cochise	66.0	Apache; La Paz; Navajo; Graham; Mohave; Pinal; Coconino; Gila; Yuma; Yavapai; Pima; Maricopa; Cochise
Other	Graham, La Paz, Santa Cruz, Gila & Greenlee	38.7	Apache	10.1	Yavapai	28.6	Apache; Navajo; Coconino; Pinal; Mohave; Yuma; Cochise
Cerebrovascular Diseases	Greenlee & La Paz	32.1	Mohave	22.4	Pinal	9.7	Mohave
COPD	Graham, La Paz, Santa Cruz & Greenlee	43.2	Pinal	17.2	Navajo	16.0	Pinal; Yuma; Mohave; Pima; Yavapai; Gila; Maricopa; Cochise; Apache
Suicide	La Paz, Graham, Greenlee, Gila & Santa Cruz	29.4	Pinal	12.2	Cochise	17.2	Pinal; Mohave; Yavapai; Apache; Pima; Coconino; Navajo; Maricopa; Yuma[a]; Cochise
Homicide	All except Maricopa, Pima, Apache & Pinal	23.6	Apache	9.7	Pima	13.9	Apache; Pinal; Maricopa; Pima
Pneumonia/Inf.	Greenlee, La Paz & Santa Cruz	34.3	Graham	7.2	Cochise	27.1	Graham; Navajo; Apache; Yavapai; Coconino; Pima; Pinal; Maricopa; Gila
Diabetes	La Paz, Apache, Santa Cruz, Gila, Greenlee & Graham	26.3	Navajo	5.2	Yavapai	21.1	Navajo; Pinal; Coconino; Yuma; Cochise
Atherosclerosis	All except Maricopa, Pima, Yavapai & Yuma	13.6	Yuma	4.1	Maricopa	9.5	Yuma; Pima; Yavapai; Maricopa

[a] Only those counties with at least ten deaths for a specific cause were included in the ranking of counties.

[b] The ranking is from the county which exceeds the U.S. rate the most to the county which exceeds the U.S. rate the least.

AGE-SPECIFIC MORTALITY

Infant Mortality

Mortality among infants, those less than one year of age, continued to decline in 1980s both nationwide and in Arizona (Table 3-1). Arizona's infant mortality rate has been lower than the U.S. rate in every year since 1970. From 1981 onward, the U.S. rate fell by 11.1 percent, from 11.7 to 10.4 deaths/1,000 live births. The progress in Arizona was even more spectacular, with the 1986 infant mortality rate 19.0 percent lower than in 1981 (9.4 and 11.6 deaths/1,000 live births, respectively). While at the beginning of this decade, the U.S. exceeded the Arizona rate by less than one percent, the gap widened to a difference of 9.6 percent in 1986 between the national and state rates.

The pattern of neonatal (i.e., in the first four weeks of life) and postneonatal deaths (i.e., after the first 28 days of life) throughout the 1980s continued the transition in the two components of infant mortality witnessed from 1970 onward both in Arizona and the nation. In the 1950s and 1960s, a relatively greater decline in postneonatal compared to neonatal death rates occurred concurrently with declines in the proportional contribution of postneonatal deaths to infant mortality (Table 3-2). Postneonatal death rates decreased by 71.7, and the proportional share of deaths occurring in the postneonatal period fell from 41.8 in 1950 to 30.3 percent in 1970. During the same period, a considerably smaller decline of 53.4 percent in neonatal mortality rates occurred in Arizona.

The corresponding U.S. figures reflect a similar difference in the rates of decline between postneonatal and neonatal death rates. Postneonatal mortality dropped by 45.4 percent between 1950 and 1970, while neonatal mortality showed over the same time a 26.7 percent decline nationally. Simultaneously, the proportion of infant deaths in the U.S. that were postneonatal fell by one-fifth.

These trends in neonatal and postneonatal mortality reversed in the most recent 17 years. The proportional contribution of postneonatal deaths in Arizona increased from 30.3 in 1970 to 42.6 in 1986. The same trend has been experienced across the United States, with the percentage of infant deaths occurring in the postneonatal period increasing from 23.7 in 1970 to 35.6 in 1986. In addition, unlike the earlier period, a considerably greater decline in neonatal mortality and a much slower rate of decline in postneonatal death rates have been observed both in Arizona and nationwide.[8] The neonatal mortality rate in Arizona fell from 12.4 in 1970 to 5.4 deaths/1,000 live births in 1986. In contrast to this spectacular decline of 56.5 percent, postneonatal mortality decreased by 25.9 percent (the corresponding U.S. figures are 55.6 and 21.3 percent, respectively).

The observed decline in overall infant mortality and its neonatal component has been accompanied since 1970 by a relative increase in the proportion of infant deaths which are postneonatal. This trend suggests that the rate of decline in infant mortality is very likely to be slower in the future than it was in the past, unless postneonatal deaths gain renewed attention of public health professionals.

Renewed attention is of particular importance in Arizona, when the former major strides in improved survival has been concentrated in its neonatal component. Arizona's

[8] Starfield B. Postneonatal mortality. Annual Review of Public Health, 1985, 6, 21-40.

neonatal mortality rates have been consistently lower than the corresponding U.S. rates in every year since 1970. In contrast, the postneonatal death rate has been higher in Arizona than nationally in all but two years during the same period.

No evidence supports the contention that the greater national postneonatal share of infant mortality is a result of the postponement of earlier neonatal deaths due to medical advances in newborn intensive care.[9] This care has resulted in much improved survival odds for infants born too early or too small (low birthweight). However, no evidence exists on which to base a conclusion that this contention also does not apply to Arizona. Between 1970 and 1982 a spectacular decline of 20.9 percent in the birth rates of low birthweight babies occurred in Arizona.[d] During the same period, the neonatal death rates decreased by 53.2 percent, and postneonatal mortality rate dropped by 35.2 percent (Table 3-2). However, since 1982 an increasing trend in the proportion of newborns who are at risk of disability or death because of low birthweight has been observed. The 1986 rate of 62.2 LBW babies per 1,000 live births was 6.5 percent higher than the rate seen in 1982. Simultaneously, the infant mortality rate due to low birthweight/short gestation increased by 60 percent. The postneonatal death rate was 14.3 percent greater in 1986 than 1982, but the neonatal death rate decreased by 6.9 percent. At this point, one cannot rule out the possibility that, in Arizona, the rising postneonatal death rates are related both to an increase in LBW births and enhanced neonatal survival due to medical technology. However, any definite answer to the question would require linked birth and death records, so that the birth-factors, including intensive care, related to postneonatal mortality could be studied in detail.

The widespread conviction that infants are at greater risk of death in their first four weeks of life than during the remainder of their infancy was never generalizable across all counties in Arizona. In 1986, the postneonatal death rates exceeded the neonatal rates by at least 26 percent in Mohave, Pinal and Yavapai, and were twice as high in Coconino, Navajo and Yuma. Each of the following six counties - Coconino, Gila, Graham, Mohave, Pinal and Yavapai - reported postneonatal mortality rates elevated by at least 20 percent above the state rate (Table 3-3).

Infant deaths per 1,000 live births exceeded the 1986 statewide infant mortality rate in seven counties. Three counties, Pinal, Gila and Graham, had rates more than 35 percent higher, with 13.1, 12.8 and 12.7 infant deaths per 1,000 live births, respectively. The three counties with elevated infant mortality rates last year (1985) all recorded declines in 1986. Greenlee and Navajo reduced their infant mortality rate by at least 50 percent and no infant deaths were recorded in La Paz county in 1986. Moreover, for the first time since 1950, the 1986 infant mortality rates in Apache and Cochise Counties were lower than the state rate.

The counties, named to this point, with excessive mortality during infancy were primarily rural. However, the two metropolitan counties, Maricopa and Pima were among the seven counties in 1986 which had a neonatal mortality rate greater than the state's. Moreover, the 1986 infant mortality rate in Maricopa was slightly higher than the state rate.

9 Ibid.

d Compare Table 1-3 in the first section dealing with natality.

The three major causes of death among infants in 1986 and throughout the decade were certain conditions in the perinatal period, congenital anomalies and sudden infant death syndrome. Annually, these three causes never accounted for less than three-quarters of all infant deaths (Table 3-4). The single syndrome responsible for most deaths of infants in Arizona during the 1980s was and is sudden infant death syndrome (SIDS). In 1986 the death rate from SIDS was the highest of the past six years. One out of five infants who never reached their first birthday died from this cause. Moreover, despite lower infant mortality overall, Arizona's SIDS death rate for infants in 1986 was 46 percent higher than the national rate of 1.3.

The second leading cause of infant mortality in Arizona in 1986, low birthweight/short gestation, was responsible for 11.2 percent of infant deaths. The death rate due to this cause steadily increased in small increments between 1982 and 1986, paralleling the steady rise in the ratio of LBW births up to 1985. Infant mortality due to congenital anomalies was remarkably stable between 1982 and 1985 and then dropped in 1986 for the lowest rate in the past six years. The 23.1 percent decline in infant mortality due to birth defects was largely a function of a 40 to 50 percent decrease in deaths from congenital anomalies of the circulatory and the respiratory systems, respectively.

TABLE 3-1

INFANT MORTALITY RATES* BY COUNTY OF RESIDENCE
ARIZONA AND UNITED STATES, 1950 - 1986

COUNTY	1950	1960	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986
U.S.	29.2	26.0	24.7	19.8	16.1	12.5	11.7	11.2	10.9	10.7	10.6	10.4**
ARIZONA	45.7	31.8	25.3	17.8	14.8	12.4	11.6	9.3	9.6	9.5	9.6	9.4
Apache	106.4	55.4	32.5	26.3	18.8	14.1	14.9	11.4	11.2	13.8	11.9	9.1
Cochise	34.0	26.7	32.7	14.1	15.9	12.1	13.4	9.0	12.8	14.2	9.6	5.2
Coconino	61.2	46.1	44.4	27.7	21.6	10.9	11.5	9.0	12.2	8.8	10.8	9.8
Gila	48.8	47.0	49.0	15.9	16.5	17.0	6.6	16.0	7.3	4.5	7.8	12.8
Graham	57.1	44.9	30.0	24.3	18.8	15.6	27.5	8.5	6.9	15.7	9.8	12.7
Greenlee	34.1	27.5	23.5	38.8	23.5	18.3	3.3	19.5	-	10.3	18.6	9.4
La Paz	NA	NA	NA	NA	NA	NA	NA	NA	33.9	5.1	25.6	-
Maricopa	37.3	26.9	20.9	15.5	14.4	13.4	12.0	9.3	9.2	8.9	9.4	9.6
Mohave	47.8	21.7	31.3	6.5	11.0	20.7	9.0	12.4	9.7	8.1	7.2	10.3
Navajo	107.3	64.4	45.2	29.0	20.2	14.2	16.0	9.6	12.0	9.7	13.7	6.3
Pima	28.7	27.3	18.4	17.3	11.1	8.1	9.2	8.3	9.7	9.9	9.1	9.0
Pinal	68.9	38.6	30.5	23.2	18.1	9.2	9.0	9.8	9.1	14.6	8.8	13.1
Santa Cruz	48.0	26.1	21.1	16.8	13.8	6.0	9.6	6.1	6.6	7.8	7.6	7.9
Yavapai	38.6	30.2	30.7	14.7	12.6	11.8	15.0	9.4	10.7	11.0	8.3	11.5
Yuma	50.5	32.9	31.3	19.4	15.5	14.6	11.3	8.4	8.3	6.9	9.7	6.1

* Per 1,000 live births

** Provisional

TABLE 3-2

INFANT, NEONATAL AND POSTNEONATAL MORTALITY RATES AND PERCENT POSTNEONATAL DEATHS, ARIZONA, UNITED STATES, 1950 - 1986

												Percent change:		
	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986	1950-70	1970-81	1981-86
UNITED STATES														
Infant mortality[1]	29.2	26.0	19.8	16.1	12.5	11.7	11.2	10.9	10.7	10.6	10.4	-32.2	-40.9	-11.1
Neonatal mortality[1]	20.6	18.7	15.1	11.8	8.4	7.9	7.7	7.3	6.9	6.9	6.7	-26.7	-47.7	-15.2
Postneonatal mortality[1]	8.6	7.3	4.7	4.3	4.1	3.8	3.5	3.6	3.8	3.7	3.7	-45.4	-19.1	- 2.6
Percent postneonatal deaths[2]	29.5	28.1	23.7	26.7	32.8	32.5	31.2	33.0	35.5	34.9	35.6	-19.7	+37.1	+ 9.5
ARIZONA														
Infant mortality[1]	45.7	31.8	17.8	14.8	12.4	11.6	9.3	9.6	9.5	9.6	9.4	-61.1	-34.8	-19.0
Neonatal mortality[1]	26.6	19.4	12.4	9.6	8.3	7.4	5.8	5.9	5.5	5.9	5.4	-53.4	-40.3	-24.0
Postneonatal mortality[1]	19.1	12.4	5.4	5.2	4.1	4.2	3.5	3.7	4.0	3.8	4.0	-71.7	-22.2	- 4.8
Percent postneonatal deaths[2]	41.8	39.0	30.3	35.1	33.1	36.2	37.6	38.5	42.1	39.6	42.6	-27.5	+19.5	+17.7

1 Rates per 1,000 live births

2 Total infant mortality = 100 percent

TABLE 3-3

NEONATAL, POSTNEONATAL AND TOTAL INFANT MORTALITY
BY COUNTY OF RESIDENCE WITH RATES*
ARIZONA, 1986

County of Residence	INFANT DEATHS			RATES		
	Total	Neonatal	Post-Neonatal	Total	Neonatal	Post-Neonatal
ARIZONA	569	331	238	9.4	5.4	4.0
Apache	16	9	7	9.1	5.1	4.0
Cochise	8	5	3	5.2	3.3	1.9
Coconino	18	6	12	9.8	3.3	6.5
Gila	8	5	3	12.8	8.0	4.8
Graham	5	3	2	12.7	7.6	5.1
Greenlee	1	1	-	9.4	9.4	-
La Paz	-	-	-	-	-	-
Maricopa	340	204	136	9.6	5.8	3.8
Mohave	11	4	7	10.3	3.8	6.5
Navajo	12	4	8	6.3	2.1	4.2
Pima	94	66	28	9.0	6.3	2.7
Pinal	27	12	15	13.1	5.8	7.3
Santa Cruz	4	3	1	7.9	5.9	2.0
Yavapai	13	5	8	11.5	4.4	7.1
Yuma	12	4	8	6.1	2.0	4.1

* Per 1,000 live births

TABLE 3-4

INFANT MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES OF DEATH[2]
ARIZONA, 1981 - 1986

CAUSE OF DEATH	ICD Codes	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
Certain conditions in perinatal period	760-779	4.8	3.5	3.6	3.4	3.4	3.8	+11.8
Low birthweight/ short gestation	765	1.0	0.6	0.7	0.8	0.9	1.0	+11.1
Respiratory distress syndrome	769	1.0	0.7	0.8	0.7	0.8	0.7	-12.5
Other respiratory	770	0.6	0.6	0.6	0.9	0.5	0.7	+40.0
Intrauterine hypoxia or birth asphyxia	768	0.2	0.2	0.2	0.2	0.3	0.1	-67.7
Maternal complications	761	0.2	0.1	0.2	0.1	0.2	0.3	+50.0
Other perinatal conditions	760,762-764 766-767, 771-779	1.8	1.2	1.1	0.7	0.8	0.9	+12.5
Congenital anomalies	740-759	3.1	2.4	2.6	2.4	2.6	2.0	-23.1
Circulatory system	745-747	1.2	1.1	1.1	1.0	1.0	0.6	-40.0
Respiratory system	748	0.3	0.2	0.2	0.2	0.4	0.2	-50.0
Central nervous system	740-742	0.5	0.2	0.4	0.3	0.3	0.3	0.0
Other congenital anomalies	743-744, 749-759	1.1	0.9	0.9	0.9	0.8	0.8	0.0
Sudden infant death syndrome	798.0	1.6	1.4	1.6	1.5	1.5	1.9	+26.7
Accidents/adverse effects	800-949	0.3	0.3	0.2	0.2	0.4	0.3	-25.0
Pneumonia/influenza	480-487	0.3	0.3	0.2	0.3	0.2	0.2	0.0
All causes		11.6	9.3	9.6	9.5	9.6	9.4	- 2.1

1 Infant mortality rates are presented per 1,000 live births.

2 The five causes with the greatest number of deaths over the 1981-1986 period.

Childhood Mortality

In 1986 an estimated 742,815 children between 1 to 14 years of age resided in Arizona, accounting for 22 percent of the state's total population. Death claimed the lives of 317 of these children, resulting in a total mortality rate of 42.7 per 100,000 children in 1986 (Table 3-5). The 1986 death rate was not only 8.9 percent higher than the prior year's rate but also the third highest rate of the past six years.

Accidents accounted for one-half of children's deaths in 1986 and the accidental mortality rate rose 10.9 percent between 1985 and 1986. Motor vehicle accidents, the consistent number one killer of Arizona's children, became an even greater killer in 1986. The 1986 vehicular death rate was 17.8 percent higher than in 1985 and was the highest recorded rate of the past six years. In fact, six years ago the rate was 15.2 percent lower. Drowning mortality had gradually declined between 1983 and 1985 and then jumped by 26.1 percent in 1986 to 5.8 drowning deaths per 100,000 children 1 to 14 years of age.

Heart disease and cancer also claimed children's lives at higher rates in 1986 than 1985. In fact, the mortality rate from diseases of the heart was the highest and the mortality rate from cancer the second highest of the last six years. On the more positive side, the mortality rate due to homicide declined a further 29.1 percent between 1986 and 1985, adding to the earlier decrease of 31 percent between 1984 and 1985.

Gender still was more significantly related to differences in childhood mortality than region of residence. The 1986 total mortality rate for boys was 1.6 times greater than for girls, while the risk of death was only 1.2 times higher for children living in rural Arizona than their urban counterparts (Table 3-6). However, girls experienced a sharper increase (15.4 percent) in death rate between 1985 and 1986 than did boys (5 percent). In large part, this increase in total mortality for girls stemmed from an increase of 43 percent in the accidental death rate. In contrast, virtually no change in boys' accidental mortality occurred in the year. Actually, the only cause of death for girls which showed an annual decline was cancer. Moreover, girls in 1986 were at higher risk than boys for death from either homicide or pneumonia/influenza, with the latter not even among the five leading causes of boys' mortality in the 1980's.

The mortality disadvantage of rural relative to urban children widened between 1985 and 1986. In 1985 the total mortality rate among rural children was 18 percent, but by 1986 23.4 percent greater than the rate among urban children. Rural compared to urban children were at lower risk of death only from malignant neoplasms. Between 1985 and 1986, urban and rural mortality rates due to non-vehicular accidents other than drowning decreased by 14.9 and 9.6 percent, respectively. Simultaneously, the mortality rate among rural children from vehicular accidents rose to 15.5 deaths per 100,000 in 1986, the highest death rate from this cause in this decade. The vehicular accident death rate also rose for urban children but much less dramatically than the 56.6 percent increase seen for rural children.

Drowning claimed more urban children's lives in 1986 than in either 1985 or 1984. The cancer death rate for urban children nearly doubled between 1985 and 1986 and was the highest rate for this cause in this decade. Urban children were 2.3 times more likely to die of cancer than rural children. In contrast, birth defects, which accounted for only one death among rural children in 1985, claimed seven lives in 1986, resulting in a 25 percent higher death rate for rural than urban children.

The total mortality rates in 1986 were virtually identical to those in 1985 for urban males and rural females (Table 3-7). On the other hand, the death rates of urban males and rural females considerably increased over the year (23.9 and 20.1 percent, respectively). Although the mortality disadvantage of rural relative to urban children was not the highest noted since 1981, it was much more substantial in 1986 than in the previous year. Rural compared to urban boys had a 7.5 percent higher mortality risk in 1985, but a 30 percent higher risk in 1986.

To complete this picture, the mortality advantage female children in urban areas have over those in rural Arizona diminished substantially between 1985 and 1986. In one year, the mortality rate among urban girls rose by about one-fourth, while the likelihood of death among rural girls did not change significantly.

One of the most alarming phenomena in childhood mortality in 1986 concerned a cause of death not among the five leading causes of death, namely suicide. Ten to fourteen year old children rarely have committed suicide. The rate of death due to taking one's own life among children ten to fourteen years of age usually has been less than one per 100,000 and their suicides accounted for less than one percent of all suicide deaths.[10] In 1986, more children (all of them boys) took their own lives than were murdered. The suicide mortality rate for these ten to fourteen year old children was 3.4 per 100,000. The aberrantly high number of eight childhood suicide victims in 1986 was equal to the number of boys who died from diseases of the heart. One out of twenty-five boys who died in 1986 did so by his own hand.

The sudden one-year change in the number of suicide deaths does not justify a discussion on trends in suicide mortality among children. However, when considering the entire period between 1981 and 1986, it is worth noting that suicide has become the sixth leading cause of death among male children in Arizona, surpassing mortality from infectious diseases.

[10] Shaffer, D. and Fisher, P. The epidemiology of suicide in children and young adolescents. Journal of the American Academy of Child Psychiatry, 1981, 20, 545-65.

TABLE 3-5

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG
CHILDREN (1-14 years) BY GENDER,
ARIZONA, 1981 - 1986

GENDER/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
MALE							
Accidents	31.7	20.6	26.0	22.3	27.5	27.3	- 0.7
Motor vehicle	10.8	8.0	11.0	11.6	12.9	14.0	+ 8.5
Drowning	10.1	5.5	7.2	4.1	6.2	7.7	+ 24.2
Other accidents	10.8	7.1	7.8	6.6	8.4	5.6	- 33.3
Malignant neoplasms	4.1	5.2	3.9	4.6	2.5	5.6	+124.0
Congenital anomalies	3.8	2.5	4.2	5.5	3.1	3.1	+ 3.2
Homicide	2.2	4.0	1.8	3.5	3.1	1.6	- 48.4
Diseases of heart	1.3	2.5	1.8	1.4	0.6	2.1	+250.0
All causes	56.6	46.5	48.7	48.3	49.6	52.1	+ 5.0
(Number of all deaths)	(179)	(151)	(163)	(167)	(177)	(197)	+ 11.3
FEMALE							
Accidents	17.5	19.0	12.0	17.0	10.7	15.3	+ 43.0
Motor vehicle	7.6	6.8	4.1	7.9	4.9	7.1	+ 44.9
Drowning	4.3	4.8	4.1	5.8	2.9	3.8	+ 31.0
Other accidents	5.6	7.4	3.8	3.3	2.9	4.4	+ 51.7
Malignant neoplasms	4.3	5.5	4.1	1.8	4.4	4.1	- 6.8
Congenital anomalies	3.0	4.8	5.0	4.8	2.3	2.7	+ 17.4
Homicide	1.0	2.6	1.2	2.7	1.7	1.9	+ 11.8
Pneumonia and influenza	0.0	3.1	1.2	1.2	0.6	1.4	+133.3
All causes	33.9	44.5	33.2	36.1	28.5	32.9	+ 15.4
(Number of all deaths)	(102)	(138)	(106)	(119)	(98)	(120)	+ 22.4
TOTAL							
Accidents	24.6	19.8	19.0	19.7	19.3	21.4	+ 10.9
Motor vehicle	9.2	7.4	7.6	9.8	9.0	10.6	+ 17.8
Drowning	7.3	5.2	5.6	4.9	4.6	5.8	+ 26.1
Other accidents	8.1	7.2	5.8	5.0	5.7	5.0	- 12.3
Malignant neoplasms	4.2	5.4	4.0	3.3	3.4	4.8	+ 41.2
Congenital anomalies	3.4	3.6	4.6	5.2	2.7	3.0	+ 11.1
Homicide	1.6	3.3	1.5	3.1	2.4	1.7	- 29.2
Diseases of heart	1.0	1.6	1.4	1.0	0.4	1.7	+325.0
All causes	45.5	45.5	41.1	42.4	39.2	42.7	+ 8.9
(Number of all deaths)	(281)	(289)	(269)	(286)	(275)	(317)	+ 15.3

1 Rates are presented per 100,000 population.

2 The five causes with the greatest number of deaths over the 1981-1986 period

TABLE 3-6

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG
CHILDREN (1-14 years) IN URBAN AND RURAL AREAS,[3]
ARIZONA, 1981 - 1986

AREA/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Accidents	24.4	19.1	16.6	17.7	17.4	18.8	+ 8.0
Motor vehicle	10.5	6.8	6.4	9.4	8.6	8.8	+ 2.3
Drowning	6.6	5.5	6.2	5.7	4.1	5.9	+ 43.9
Other accidents	7.3	6.8	4.0	2.6	4.7	4.0	- 14.9
Malignant neoplasms	4.8	5.1	4.2	3.5	3.1	5.7	+ 83.9
Congenital anomalies	3.9	3.5	3.8	4.3	3.5	2.8	- 20.0
Homicide	1.8	3.3	1.7	2.8	2.8	1.5	- 46.4
Infectious diseases	0.4	0.9	0.9	1.2	0.6	1.9	+216.7
All causes	45.7	41.2	36.3	37.9	37.4	40.1	+ 7.2
(Number of all deaths)	(201)	(187)	(171)	(186)	(190)	(218)	+ 14.7
RURAL							
Accidents	25.5	21.6	25.7	24.9	23.9	28.5	+ 19.2
Motor vehicle	6.2	8.9	10.9	10.8	9.9	15.5	+ 56.6
Drowning	9.1	4.4	4.4	2.7	5.7	5.5	- 3.5
Other accidents	10.2	8.3	10.4	11.4	8.3	7.5	- 9.6
Congenital anomalies	2.3	3.9	6.6	7.6	0.5	3.5	+600.0
Malignant neoplasms	2.8	6.1	3.0	2.7	4.2	2.5	- 40.5
Homicide	1.1	3.3	1.1	3.8	1.6	2.5	+ 56.3
Diseases of heart	0.6	3.9	1.6	2.7	1.6	2.5	+ 56.3
All causes	45.3	56.6	53.6	54.2	44.3	49.6	+ 12.0
(Number of all deaths)	(80)	(102)	(98)	(100)	(85)	(99)	+ 16.5
STATEWIDE							
Accidents	24.6	19.8	19.0	19.7	19.3	21.4	+ 10.9
Motor vehicle	9.2	7.4	7.6	9.8	9.0	10.6	+ 17.8
Drowning	7.3	5.2	5.6	4.9	4.6	5.8	+ 26.1
Other accidents	8.1	7.2	5.8	5.0	5.7	5.0	- 12.3
Malignant neoplasms	4.2	5.4	4.0	3.3	3.4	4.8	+ 41.2
Congenital anomalies	3.4	3.6	4.6	5.2	2.7	3.0	+ 11.1
Homicide	1.6	3.3	1.5	3.1	2.4	1.7	- 29.2
Diseases of heart	1.0	1.6	1.4	1.0	0.4	1.7	+325.0
All causes	45.5	45.5	41.1	42.4	39.2	42.7	+ 8.9
(Number of all deaths)	(281)	(289)	(269)	(286)	(275)	(317)	+ 16.0

1 Rates are presented per 100,000 population.

2 The five causes with the greatest number of deaths over the 1981-1986 period.

3 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

TABLE 3-7

MORTALITY RATES [1] AMONG
CHILDREN (1-14 years) BY GENDER IN URBAN AND RURAL AREAS,[2]
ARIZONA, 1981 - 1986

AREA/GENDER	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Male	56.7	42.0	43.5	41.7	48.6	48.3	- 0.6
Female	34.1	40.3	28.7	33.9	25.5	31.6	+23.9
Total	45.7	41.2	36.3	37.9	37.4	40.1	+ 7.2
RURAL							
Male	56.4	57.4	61.9	65.5	52.3	62.8	+20.1
Female	33.7	55.8	44.8	42.3	36.4	36.2	- 0.5
Total	45.3	56.6	53.6	54.2	44.3	49.6	+12.0
STATEWIDE							
Male	56.6	46.5	48.7	48.3	49.6	52.1	+ 5.0
Female	33.9	44.5	33.2	36.1	28.5	32.9	+15.4
Total	45.5	45.5	41.1	42.4	39.2	42.7	+ 8.9

1 Rates are presented per 100,000 population.

2 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

Adolescent Mortality

Adolescents refer to those individuals between the ages of 15 to 19, an important developmental period marking the transition from childhood to adulthood. In 1986 an estimated 245,820 adolescents resided in Arizona, comprising 7.3 percent of the state's population. The mortality rate for adolescents in 1986 was 4.3 percent higher than the previous year, 5.8 percent higher than the rate in 1981, and the highest rate in the decade (Table 3-8). In fact, 1983 marked the end of a steady annual five to ten percent decline in mortality for teenagers.

Accidents accounted for almost six out of ten deaths among teenagers in 1986. Motor vehicle collisions, which accounted for 42.5 percent of total adolescent mortality between 1981 and 1985, now were responsible for one-half of all teenage deaths in 1986. Moreover, the rate of adolescent mortality due to motor vehicle crashes in 1986 (56.9 deaths per 100,000 teenagers) was higher than the rate of 54.7 deaths recorded in 1970.

Adolescents also were murdered at a higher rate in 1986 than 1985 in Arizona. In 1986 the homicide mortality rate was 72.5 percent higher than the previous year's rate and more than double the 1981 homicide death rate.

The one-year decreases in death rates from diseases of the heart (33.3 percent), cancer (20.8 percent) and suicide (13.3 percent) for teenagers were more modest than the large rises in violent death from vehicular accidents and homicide. In fact, these declines were not sufficient to counterbalance those increases and total mortality consequently rose.

Considerable gender differences characterized adolescents' risk of death in general as well as from specific causes. The likelihood of dying was twice as high for teenage boys than girls in 1986. While female adolescents had a slight decline of 3.1 percent in total mortality between 1985 and 1986, the 1986 and 1985 rates exceeded the 1981 rate by at least 40 percent. In contrast, teenage males experienced an increase in total mortality in the 1985-1986 period, but their 1986 rate was below the 1981 rate. An adolescent male was more likely to lose his life to any of the leading causes of teenage death, except for malignant neoplasms, than was his female counterpart. Cancer struck down both genders at equal rates.

Throughout the 1980s, teenage girls generally succumbed less than teenage boys to diseases of the heart. In 1986 no adolescent female died from heart disease, while the death rate due to heart disease among their male counterparts was the highest recorded in this decade. The record-high male adolescent suicide mortality rate seen in 1985 unfortunately was not diminished in 1986 and remained 41 percent higher than the 1981 rate. In sharp contrast, suicide deaths among teenage females dropped in 1986 to its lowest rate of the past six years. The difference between the two genders in self-annihilation was the largest ever seen in 1986. For every teenage girl that took her own life, 6.5 teenage boys committed suicide. In addition, the gender gap widened in homicide mortality, since the death rate doubled for male adolescents but only increased 19.1 percent for female teenagers.

Adolescents who resided in the rural counties of Arizona in 1986 had 42 percent less chance of surviving to their early twenties than their urban peers (Table 3-9). The mortality advantage of living in Maricopa or Pima Counties rather than the rural counties was sustained in 1986 due to a 13 percent annual increase in the rural death rate combined with a steady urban rate between 1985 and 1986. In fact, the 1986 rural adolescent mortality rate was the highest recorded in the past six years, exceeding the 1981 rate by 36 percent.

Suicide mortality rates were generally higher for rural than urban teenagers in the past six years with 1985 being a notable exception. Then between 1985 and 1986, the suicide death rate among rural adolescents showed a four-fold increase, bringing it to the record-high level seen among urban teenagers in 1985. The teenage suicide death rate in urban counties meanwhile decreased almost 40 percent in the one year.

Accidents, particularly those involving motor vehicles, had the widest urban-rural mortality gap among the leading causes of teenage death. Between 1985 and 1986 the vehicular death rate rose by 31.4 percent among rural adolescents, far surpassing any previous rate seen in the 1980's. In contrast, the motor-vehicle death rate for urban adolescents steadily decreased in small increments between 1984 and 1986. If urban adolescents had died from vehicular accidents at the rate of rural adolescents in 1986, 79 percent more traffic fatalities would have occurred or 68 more teenagers in urban counties would have lost their life.

The record-high cancer mortality rates seen in this decade in 1985 for male adolescents and in rural areas dropped by 44.1 and 70.8 percent, respectively. Despite this decline between 1985 and 1986, the rural cancer mortality rate remained slightly higher than the 1981 rate. Simultaneously, the 1986 cancer mortality rate in urban areas exceeded the 1985 rate by 50 percent and was the second highest in the past six years.

In 1986 both rural male and female adolescents as compared to their urban peers were at considerably higher risk of death by 55 and 21 percent, respectively (Table 3-10). Female teenagers in both regions experienced, however, a similar decline in their total mortality rate between 1985 and 1986. At the same time, the rate of total mortality among rural males showed a 21.5 percent increase, while the mortality rate among urban males increased by only 2.4 percent.

TABLE 3-8

MORTALITY RATES[1] FOR THE FIVE LEADING CAUSES[2] OF DEATH AMONG ADOLESCENTS (15-19 years) BY GENDER, ARIZONA, 1981 - 1986

GENDER/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
MALE							
Accidents	105.5	77.0	72.7	101.6	78.6	91.4	+ 16.3
Motor vehicle	70.9	53.8	56.6	84.5	66.8	72.6	+ 8.7
Other accidents	34.6	23.2	16.1	17.1	11.8	18.8	+ 59.3
Suicide	18.5	20.7	21.1	17.9	26.2	26.1	- 0.4
Homicide	9.7	14.1	12.7	15.4	9.3	19.6	+110.7
Malignant neoplasms	8.9	4.1	5.9	6.0	10.2	5.7	- 44.1
Diseases of heart	4.0	1.6	1.7	2.6	2.5	4.1	+ 64.0
All causes	164.2	130.7	130.1	161.4	146.4	158.4	+ 8.2
(Number of all deaths)	(204)	(158)	(163)	(189)	(173)	(194)	+ 12.1
FEMALE							
Accidents	33.2	29.6	30.1	29.4	44.0	44.6	+ 1.4
Motor vehicle	28.2	25.4	26.7	25.1	37.2	41.4	+ 11.3
Other accidents	5.0	4.2	3.4	4.3	6.8	3.2	- 52.9
Suicide	4.1	9.3	7.7	6.1	8.5	4.0	- 52.9
Homicide	3.3	6.8	3.4	7.8	6.8	8.1	+ 19.1
Malignant neoplasms	2.5	2.5	1.7	1.7	4.2	5.7	+ 35.7
Diseases of heart	0.8	2.5	0.9	0.9	3.4	0.0	-100.0
All causes	51.4	64.3	54.2	52.8	74.5	72.2	- 3.1
(Number of all deaths)	(62)	(76)	(63)	(61)	(88)	(89)	+ 1.1
TOTAL							
Accidents	69.9	53.5	51.6	65.8	61.3	67.5	+ 10.1
Motor vehicle	49.9	39.7	41.8	55.0	52.0	56.9	+ 9.4
Other accidents	20.0	13.8	9.8	10.8	9.3	10.6	+ 14.0
Suicide	11.4	15.1	14.5	12.0	17.3	15.0	- 13.3
Homicide	6.5	10.5	8.1	11.6	8.0	13.8	+ 72.5
Malignant neoplasms	5.7	3.4	3.8	3.9	7.2	5.7	- 20.8
Diseases of heart	2.4	2.1	1.3	1.7	3.0	2.0	- 33.3
All causes	108.7	97.9	92.5	107.5	110.4	115.1	+ 4.3
(Number of all deaths)	(266)	(234)	(217)	(250)	(261)	(283)	+ 8.4

1 Rates are presented per 100,000 population.

2 The five causes with the greatest number of deaths over the 1981-1986 period.

TABLE 3-9

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG
ADOLESCENTS (15-19 years) IN URBAN AND RURAL AREAS[3],
ARIZONA, 1981 - 1986

AREA/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Accidents	68.7	45.5	43.6	56.0	56.8	57.1	+ 0.5
Motor vehicle	49.9	37.0	36.1	48.4	47.6	47.2	- 0.8
Other accidents	18.8	8.5	7.5	7.6	9.2	9.9	+ 7.6
Suicide	10.0	16.0	12.8	12.2	21.8	13.2	- 39.4
Homicide	7.2	9.7	7.5	11.7	6.3	16.5	+161.9
Malignant neoplasms	6.1	3.4	4.1	4.1	4.0	6.0	+ 50.0
Diseases of heart	2.8	1.7	1.2	1.8	2.9	2.2	- 24.1
All causes	105.9	87.1	77.9	97.9	103.3	103.8	+ 0.5
(Number of all deaths)	(191)	(153)	(134)	(168)	(180)	(189)	+ 5.0
RURAL							
Accidents	73.0	75.5	73.4	93.5	74.0	98.7	+ 33.4
Motor vehicle	49.7	47.2	57.4	73.8	64.4	84.6	+ 31.4
Other accidents	23.3	28.3	16.0	19.7	9.6	14.1	+ 46.9
Suicide	15.5	12.6	19.2	11.5	4.8	20.4	+325.0
Homicide	4.7	12.6	9.6	11.5	12.9	6.3	- 51.2
Malignant neoplasms	4.6	3.1	3.2	3.3	16.1	4.7	- 70.8
Diseases of heart	1.5	3.2	1.6	1.6	3.2	1.6	- 50.0
All causes	108.7	127.5	132.5	134.4	130.4	147.3	+ 13.0
(Number of all deaths)	(75)	(81)	(83)	(82)	(81)	(94)	+ 16.0
STATEWIDE							
Accidents	69.9	53.5	51.6	65.8	61.3	67.5	+ 10.1
Motor vehicle	49.9	39.7	41.8	55.0	52.0	56.9	+ 9.4
Other accidents	20.0	13.8	9.8	10.8	9.3	10.6	+ 13.0
Suicide	11.4	15.1	14.5	12.0	17.3	15.0	- 13.3
Homicide	6.5	10.5	8.1	11.6	8.0	13.8	+ 72.5
Malignant neoplasms	5.7	3.4	3.8	3.9	7.2	5.7	- 20.8
Diseases of heart	2.4	2.1	1.3	1.7	3.0	2.0	- 33.3
All causes	108.7	97.9	92.5	107.5	110.4	115.1	+ 4.3
(Number of all deaths)	(266)	(234)	(217)	(250)	(261)	(283)	+ 8.4

1 Rates are presented per 100,000 population.

2 The five causes with the greatest number of deaths over the 1981-1986 period.

3 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

TABLE 3-10

MORTALITY RATES[1] AMONG
ADOLESCENTS (15-19 years) BY GENDER IN URBAN AND RURAL AREAS,[2]
ARIZONA, 1981 - 1986

AREA/GENDER	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Male	158.6	115.0	117.5	141.2	135.7	139.0	+ 2.4
Female	51.7	58.7	36.6	53.9	70.5	68.4	- 3.0
Total	105.9	87.1	77.9	97.9	103.3	103.8	+ 0.5
RURAL							
Male	180.0	174.0	164.9	218.0	177.1	215.2	+21.5
Female	50.6	79.8	99.6	49.8	85.3	82.6	- 3.2
Total	108.7	127.5	132.5	134.4	130.4	147.3	+13.0
STATEWIDE							
Male	164.2	130.7	130.1	161.4	146.4	158.4	+ 8.2
Female	51.4	64.3	54.2	52.8	74.5	72.2	- 3.1
Total	108.7	97.9	92.5	107.5	110.4	115.2	+ 4.4

1 Rates are presented per 100,000 population.

2 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

Mortality of Young Adults

In 1986 nearly two-fifths of Arizona's population was between 20 and 44 years of age. Among the six developmental periods examined in the life span, young adulthood, with an estimated 1.3 million individuals, easily represented the largest segment of the population. On the other hand, fewer than one out of ten deaths in Arizona occur during young adulthood. When a death did occur within this age group, there was a 55 percent chance that the young adult was the victim of a violent death.

The total mortality rate among young adults in 1986 was 169.6 deaths per 100,000, the largest rate observed since 1980 (Table 3-11). After a substantial decrease between 1981 and 1982, the mortality rate was relatively stable until the considerable rise in the past year. The 10.9 percent increase, or 16.7 additional deaths per 100,000 young adults that occurred between 1985 and 1986, was not due to any single leading cause of death. Instead increased mortality from accidents, suicide, cancer and homicide all contributed to the higher total mortality rate among young adults. Indeed, heart disease was the only leading cause of death in young adulthood which decreased between 1985 and 1986, albeit only slightly. Some small measure of encouragement also stemmed from the observation that after three years of increasing mortality rates due to vehicular accidents, no further rise occurred between 1985 and 1986. Less encouraging was the fact that the suicide death rate was at its highest level of the past six years, rising fully 12.8 percent in a single year.

Mortality rates and leading causes of death are strikingly different in many respects for young male and female adults. The only similarities between the genders are that deaths occur most often from the same five leading causes, although the ranking differs, and that accidents is the primary cause of mortality among both males and females. Death in young adulthood is over two times more likely to happen to males than females. The gender differential within specific causes is even more pronounced.

For each young adult female death from either an accident or a suicide, three male deaths occurred. Young adulthood mortality due to homicide or heart disease was four times more likely among males than females. Moreover, young adult males were at their highest risk for murder in 1986 than any other year of the past six years. Malignant neoplasms was the only cause of death from which females were at a disadvantage compared to their male counterparts. The 1986 cancer mortality rate for young adult females was 57 percent higher than for males; 40 percent higher than the 1985 female rate; and the highest annual cancer death rate observed since 1980. However, gender differences in site-specific malignant neoplasms need greater consideration to fully appreciate the gender profiles of cancer mortality within this or any age group.

The likelihood of death occurring to a young adult in 1986 was one-third higher in rural than in urban areas of Arizona. Not only total mortality but also mortality from each of the five leading causes of death occurred at higher rates in rural Arizona (Table 3-12). The individual leading causes of death exhibited no differential temporal mortality trends over the past six years between urban or rural young adults. The 1986 cause-specific mortality rates were neither the highest nor the lowest observed for either group since 1981. However, the mortality rate from all causes among young urban adults was the highest in the last six years (158.1 deaths per 100,000). Both genders contributed to this record-high total mortality rate for young urban adults (Table 3-13). In 1986, urban males and females were at a 3.6 and 5.6 percent greater mortality risk respectively than they were in 1981.

Despite the increased mortality rates among the urban genders, both rural males and females continue to have a substantial relative mortality disadvantage. If urban males and females each experienced the 1986 mortality rates of their rural counterparts, an additional 493 young male adults and 137 young female adults in Maricopa and Pima counties would have lost their lives.

TABLE 3-11

MORTALITY RATES[1] FOR THE FIVE LEADING CAUSES[2] OF DEATH AMONG YOUNG ADULTS (20-44 years) BY GENDER, ARIZONA, 1981 - 1986

GENDER/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
MALE							
Accidents	94.1	79.0	69.5	83.3	80.5	80.6	0.1
Motor vehicle	66.1	48.4	45.6	54.1	55.5	52.4	- 5.6
Other accidents	28.0	31.0	23.9	29.2	25.0	28.2	12.8
Suicide	34.5	35.1	33.6	35.9	34.5	36.7	6.4
Homicide	24.4	23.2	22.5	20.6	18.4	24.5	33.2
Diseases of heart	22.0	20.7	17.8	16.8	19.7	20.6	4.6
Malignant neoplasms	15.6	18.4	17.8	16.1	17.8	15.6	-12.4
All causes	236.7	215.9	205.3	216.2	219.0	235.1	7.4
(Number of all deaths)	(1261)	(1199)	(1184)	(1303)	(1377)	(1565)	
FEMALE							
Accidents	23.7	21.7	19.4	20.5	21.1	24.8	17.5
Motor vehicle	18.6	14.8	13.6	15.4	15.8	18.8	19.0
Other accidents	5.1	6.9	5.8	5.1	5.3	6.0	13.2
Malignant neoplasms	17.8	16.1	24.3	21.0	17.5	24.5	40.0
Suicide	11.1	10.2	12.0	7.4	8.8	12.2	38.6
Diseases of heart	9.4	6.4	7.2	6.7	6.1	5.0	-18.0
Homicide	7.9	4.6	4.9	4.9	6.1	6.1	0.0
All causes	98.0	86.7	94.9	88.9	85.5	102.6	20.0
(Number of all deaths)	(522)	(475)	(539)	(526)	(531)	(671)	
TOTAL							
Accidents	59.2	50.7	44.6	52.2	51.0	53.0	3.9
Motor vehicle	42.6	31.7	29.7	34.9	35.8	35.8	0.0
Other accidents	16.6	19.0	14.9	17.2	15.2	17.2	13.2
Suicide	22.9	22.8	22.9	21.8	21.8	24.6	12.8
Malignant neoplasms	16.8	17.2	21.0	18.5	17.7	20.0	13.0
Homicide	16.2	14.0	13.8	12.8	12.3	15.4	25.2
Diseases of heart	15.8	13.6	12.6	11.8	13.0	12.9	- 0.8
All causes	168.3	151.7	150.5	153.2	152.7	169.4	10.9
(Number of all deaths)	(1783)	(1674)	(1723)	(1829)	(1908)	(2236)	

1 Rates are presented per 100,000 population.
2 The five causes with the greatest number of deaths over 1981-1986 period.

TABLE 3-12

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG
YOUNG ADULTS (20-44 years) IN URBAN AND RURAL AREAS,[3]
ARIZONA, 1981 - 1986

AREA/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1981-1986
URBAN							
Accidents	49.5	39.0	37.3	46.0	41.0	45.3	10.5
Motor vehicle	35.8	25.7	25.1	31.2	30.2	30.5	1.0
Other accidents	13.7	13.3	12.2	14.8	10.8	14.8	37.0
Suicide	23.6	22.2	22.5	22.6	20.9	24.0	14.8
Malignant neoplasms	16.4	17.9	20.9	17.8	17.6	19.6	11.4
Homicide	15.3	13.7	14.2	11.3	12.3	15.3	24.4
Diseases of heart	14.3	12.2	10.7	10.8	11.9	12.0	0.8
All causes	150.8	133.5	136.6	142.2	138.6	158.1	14.1
(Number of all deaths)	(1235)	(1141)	(1216)	(1330)	(1351)	(1636)	
RURAL							
Accidents	92.2	90.9	70.3	74.6	86.5	80.7	- 6.7
Motor vehicle	65.6	52.3	45.9	48.3	55.6	54.7	- 1.6
Other accidents	26.6	38.6	24.4	26.3	30.9	26.0	-15.9
Suicide	20.8	24.5	24.4	18.9	24.7	26.7	8.1
Malignant neoplasms	18.3	14.9	21.6	21.2	17.8	21.4	20.2
Diseases of heart	20.8	18.5	19.2	15.4	16.7	16.1	- 3.6
Homicide	19.5	14.9	12.6	18.2	12.4	15.8	27.4
All causes	227.5	214.4	199.0	192.8	202.4	210.4	4.0
(Number of all deaths)	(548)	(533)	(507)	(499)	(557)	(600)	
STATEWIDE							
Accidents	59.2	50.7	44.6	52.2	51.0	53.0	3.9
Motor vehicle	42.6	31.7	29.7	34.9	35.8	35.8	0.0
Other accidents	16.6	19.0	14.9	17.2	15.2	17.2	13.2
Suicide	22.9	22.8	22.9	21.8	21.8	24.6	12.8
Malignant neoplasms	16.8	17.2	21.0	18.5	17.7	20.0	13.0
Homicide	16.2	14.0	13.8	12.8	12.3	15.4	25.2
Diseases of heart	15.8	13.6	12.6	11.8	13.0	12.9	- 0.8
All causes	168.3	151.7	150.5	153.2	152.7	169.4	10.9
(Number of all deaths)	(1783)	(1674)	(1733)	(1829)	(1908)	(2236)	

1 Rates are presented per 100,000 population.

2 The five causes with the greatest number of deaths over 1981-1986 period.

3 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

TABLE 3-13

MORTALITY RATES[1] AMONG
YOUNG ADULTS (20-44 years) BY GENDER IN URBAN AND RURAL AREAS[2],
ARIZONA, 1981 - 1986

AREA/GENDER	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Male	209.7	186.5	178.5	199.2	197.8	217.9	10.2
Female	91.5	79.8	94.1	84.2	78.2	96.7	23.7
Total	150.8	133.5	136.6	142.2	138.6	158.1	14.1
RURAL							
Male	328.0	316.4	298.8	278.4	295.6	299.0	1.2
Female	125.0	110.5	97.4	105.9	110.9	123.6	11.5
Total	227.5	214.4	199.0	192.8	202.4	210.4	4.0
STATEWIDE							
Male	236.7	215.9	205.3	216.2	219.0	235.1	7.4
Female	98.0	86.7	94.9	88.9	85.5	102.6	20.0
Total	168.3	151.7	150.5	153.2	152.7	169.4	10.9

1 Rates are presented per 100,000 population.

2 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

Mortality of Middle-Aged Adults

The 1986 population estimate of middle-aged adults in Arizona, those 45 to 64 years old, was 579,611 individuals. This represents a 10.4 percent increase over the 1981 population (519,190) of this age group. However, between 1981 and 1986, middle-aged adults residing in Arizona experienced only a 2.2 percent increase in the number of annual deaths (4,588 and 4,692 deaths, respectively). Therefore, the rate of total mortality among middle-aged adults in Arizona decreased 8.3 percent over the last six years. If the 1986 population of middle-aged adults had experienced the 1981 total mortality rate, an additional 430 individuals would have died in 1986.

For the first time in this decade, middle-aged adults succumbed to each of the five leading causes of death at a lower rate than they had in the previous year (Table 3-14). Moreover, in 1986 middle-aged adults experienced their lowest heart disease, total accident, non-vehicular accident, and alcoholism mortality rates of the past six years. Although the greatest decreases in cause-specific mortality rates between 1985 and 1986 occurred for alcoholism and non-vehicular accidents (16.7 and 11.9 percent, respectively), these percent reductions do not reflect the greatest number of lives saved between years. In fact, the 19.4 percent drop in the heart disease death rate between 1981 and 1986 accounted for nearly three-quarters of the 430 lives spared in the past year.

Among middle-aged adults, far more lives are lost from malignant neoplasms and diseases of the heart than all other causes of death combined. Together these two causes were responsible for 62 percent of the deaths that occurred in 1986, whereas the third leading cause of death, chronic obstructive pulmonary disease, accounted for just 4.9 percent of middle-aged adult deaths. Cancer mortality, which had been increasing annually, exhibited its first decline (6.7 cancer deaths per 100,000 middle-aged adults) since 1981. In contrast, mortality due to diseases of the heart, with few exceptions, has shown a downward trend for over two decades.

The mortality of middle-aged adults is considerably different between genders. With respect to their rates of total mortality, middle-age males succumb to death three-fourths more often than middle-age females. However, both men and women have experienced significant decreases in their total mortality rates during this decade, 14.4 and 9.0 percent, respectively.

This is the only age group in which the number one cause of death varies by gender. Cancer is the leading cause of mortality for women but heart disease is for men. In fact, chronic obstructive pulmonary disease (COPD) is the only cause of death that has an identical ranking for both men and women. Although both genders experienced similar substantial six-year declines in heart disease mortality, differences in their temporal patterns of cancer mortality were clearly evident. Cancer mortality among middle-age males was relatively stable with only slight annual fluctuations throughout the decade. In contrast, cancer mortality of middle-age females increased for four consecutive years, which gradually narrowed the gender gap. However, the annual female cancer death rate did increase between 1985 and 1986, which was the sole factor responsible for the reduction in the cancer mortality rate for the overall age group in the latest year. Middle-age males, in fact, had their highest annual cancer death rate of this decade in 1986.

The gender ratios for two broad subclasses of the leading causes of death among middle-aged adults showed a twofold difference. For the first subclass which includes heart disease, alcoholism and total accidents, i.e., motor vehicle and non-vehicular, the gender

differential ranged from 3.0 to 3.7 in favor of improved survival for females. In other words, for every middle-aged female that succumbed to one of these leading causes of death at least three males expired. The second subclass of leading causes of death includes cancer, COPD and stroke. Although males are also at a mortality disadvantage with respect to females from these causes, the gender differential is much lower, varying between 1.1 and 1.7 male deaths for every one female death.

Middle-aged adults residing in urban Arizona have a distinct survival advantage over their rural counterparts. Not only was the total mortality rate greater in rural areas but also each of the five leading causes had higher death rates among rural middle-aged adults in 1986 (Table 3-15). Heart disease headed the list of mortality causes for rural middle-aged adults until it was displaced by cancer in 1985. In contrast, cancer has been the number one killer of urban middle-aged adults since 1983. In 1986, urban adults were 27 percent and rural adults were 17 percent more likely to die from cancer than heart disease. Between 1985 and 1986, heart disease death rates for adults in both regions continued to decline and were at their lowest levels of the past six years. Meanwhile, annual cancer mortality in rural areas increased 7.1 percent in the past year and the 1986 rate of 296.1 cancer deaths per 100,000 rural adult population was the highest ratio ever seen in either region.

Although urban middle-aged adults were more favored than rural adults with respect to cancer mortality in 1986, the annual rural cancer rate among middle-age adults had been less than the urban cancer rate in most years of this decade. Unlike the gender ratio in middle-age mortality, geographic differentials in middle-age mortality are nowhere near as extreme or as frequent. In 1986, non-vehicular mortality was the only leading cause of death to occur twice as often among rural middle-age residents as their urban counterparts.

The greater likelihood of death among middle-aged adults in rural Arizona compared to the two urban counties applied to both genders. The urban-rural difference has been greater for middle-age males than females and was even more pronounced in 1986 than in the previous year (Table 3-16). This stemmed from the fact that middle-aged urban men experienced a 6.1 percent reduction in total mortality between 1985 and 1986, while a 7.3 percent increase occurred among rural males in the same period. Moreover, rural males were the only sub-group among middle-aged adults in which the total mortality rate increased, thereby accounting for the slight increase (1.4 percent) in the rate of total rural mortality. In 1986, rural males were 27 percent more likely to die than urban males compared to a 7.4 percent greater probability of death for rural than urban females.

TABLE 3-14

MORTALITY RATES[1] FOR THE FIVE LEADING CAUSES[2] OF DEATH AMONG MIDDLE-AGED ADULTS (45-64 years) BY GENDER, ARIZONA, 1981 - 1986

GENDER/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
MALE							
Diseases of heart	433.0	434.1	406.7	401.2	375.5	342.6	- 8.8
Malignant neoplasms	308.2	308.0	295.7	296.2	302.8	312.0	2.7
Chronic obstructive pulmonary disease	71.8	52.7	50.6	52.9	46.7	50.2	7.5
Accidents	75.0	63.4	60.0	55.2	53.0	53.4	0.8
Motor vehicle	41.4	31.9	26.3	31.8	31.5	31.0	- 1.6
Other accidents	33.6	31.5	33.7	23.4	21.5	22.4	4.2
Alcoholism	50.7	43.9	41.2	44.4	43.8	39.5	- 9.8
All causes	1199.8	1160.2	1094.6	1117.0	1081.9	1040.3	- 3.8
(Number of all deaths)	(2959)	(2908)	(2791)	(2915)	(2916)	(2921)	
FEMALE							
Malignant neoplasms	238.1	244.0	256.7	260.5	272.6	250.7	- 8.0
Diseases of heart	136.8	141.7	136.6	140.1	122.8	111.8	- 9.0
Chronic obstructive pulmonary disease	29.7	25.4	29.8	26.1	35.7	29.1	-18.5
Cerebrovascular diseases	26.4	23.9	28.3	28.9	25.4	29.1	14.6
Accidents	21.7	22.9	23.7	20.5	21.9	16.4	-25.1
Motor vehicle	14.7	12.7	12.9	14.5	11.3	10.4	- 8.0
Other accidents	7.0	10.2	10.8	6.0	10.6	6.0	-43.4
All causes	597.7	612.2	625.6	643.8	638.5	592.7	- 7.2
(Number of all deaths)	(1629)	(1689)	(1745)	(1824)	(1862)	(1771)	
TOTAL							
Malignant neoplasms	271.4	274.4	275.3	277.6	287.1	280.4	- 2.3
Diseases of heart	277.6	280.9	265.6	265.3	244.1	223.6	- 8.4
Chronic obstructive pulmonary disease	49.7	38.4	39.7	39.0	41.0	39.3	- 4.1
Accidents	47.0	42.1	41.0	37.1	36.7	34.4	- 6.3
Motor vehicle	27.4	21.8	19.3	22.8	20.8	20.4	- 1.9
Other accidents	19.6	20.3	21.7	14.3	15.9	14.0	-11.9
Alcoholism	34.1	30.6	29.4	31.8	30.5	25.4	-16.7
All causes	883.7	873.1	849.6	870.7	851.5	809.5	- 4.9
(Number of all deaths)	(4588)	(4597)	(4536)	(4739)	(4778)	(4692)	

1 Rates are presented per 100,000 population.
2 The five causes with the greatest number of deaths over 1981-1986 period.

TABLE 3-15

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG
MIDDLE-AGED ADULTS (45-64 years) BY URBAN AND RURAL AREAS,[3]
ARIZONA, 1981 - 1986

AREA/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1984-1985
URBAN							
Malignant neoplasms	271.7	272.9	281.5	273.7	290.5	275.5	- 5.2
Diseases of heart	274.5	273.9	248.8	251.9	240.9	216.8	-10.0
Chronic obstructive pulmonary disease	51.1	39.0	42.4	38.8	43.4	37.9	-12.7
Accidents	41.6	36.2	20.3	33.1	29.8	28.2	- 5.4
Motor vehicle	23.2	18.4	15.3	21.0	17.4	17.1	- 1.7
Other accidents	18.4	17.8	5.0	12.1	12.4	11.1	-10.5
Alcoholism	32.2	31.7	27.7	30.9	29.8	22.3	-7.0
All causes	862.8	853.8	815.9	836.9	835.0	776.9	-25.2
(Number of all deaths)	(3376)	(3393)	(3296)	(3468)	(3556)	(3443)	
RURAL							
Diseases of heart	287.0	302.4	317.9	307.9	254.3	245.5	- 3.5
Malignant neoplasms	270.5	279.2	256.8	290.2	276.5	296.1	7.1
Accidents	63.4	60.5	66.1	50.1	58.4	54.2	- 7.2
Motor vehicle	39.9	32.6	31.5	28.5	31.8	30.8	- 3.1
Other accidents	23.5	27.9	34.6	21.6	26.6	23.5	-11.7
Chronic obstructive pulmonary disease	45.4	36.4	31.6	39.3	33.3	44.0	32.1
Alcoholism	45.4	27.1	38.2	38.5	25.9	35.2	8.3
All causes	947.6	933.7	954.5	978.4	903.3	915.5	1.4
(Number of all deaths)	(1212)	(1204)	(1240)	(1271)	(1222)	(1249)	
STATEWIDE							
Malignant neoplasms	271.4	274.4	275.3	277.6	287.1	280.4	- 2.3
Diseases of heart	277.6	280.9	265.6	265.3	244.1	223.6	- 8.4
Chronic obstructive pulmonary disease	49.7	38.4	39.7	39.0	41.0	39.3	- 4.1
Accidents	47.0	42.1	41.0	37.1	36.7	34.4	- 6.3
Motor vehicle	27.4	21.8	19.3	22.8	20.8	20.4	- 1.9
Other accidents	19.6	20.3	21.7	14.3	15.9	14.0	-11.9
Alcoholism	32.7	27.0	29.2	31.8	28.9	25.4	-16.7
All causes	873.7	873.1	849.6	870.7	851.5	809.5	- 4.9
(Number of all deaths)	(4588)	(4597)	(4536)	(4739)	(4778)	(4692)	

1 Rates are presented per 100,000 population.
2 The five causes with the greatest number of deaths over 1981-1986 period.
3 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

TABLE 3-16

MORTALITY RATES[1] AMONG MIDDLE-AGED
ADULTS (45-64 years) BY GENDER IN URBAN AND RURAL AREAS[2]
ARIZONA, 1981 - 1986

AREA/GENDER	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Male	1158.1	1131.9	1036.9	1070.6	1062.3	997.1	-6.1
Female	598.3	602.5	615.1	622.5	625.1	582.5	-6.8
Total	862.8	853.8	815.9	836.9	835.0	776.9	-7.0
RURAL							
Male	1324.6	1246.0	1271.7	1264.0	1143.5	1227.0	7.3
Female	595.7	642.7	658.9	712.3	680.8	625.7	-8.1
Total	947.6	933.7	954.5	978.4	903.3	915.5	1.4
STATEWIDE							
Male	1199.8	1160.2	1094.6	1117.0	1081.9	1040.3	-3.8
Female	597.7	612.2	625.6	643.8	638.5	592.7	-7.2
Total	883.7	873.1	849.6	870.7	851.5	809.5	-4.9

1 Rates are presented per 100,000 population.

2 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

Elderly Mortality

The segment of Arizona's population over 64 years of age has shown the largest rate of growth in this decade. In 1986, an estimated 403,000 elderly resided in the state, 76 percent of whom lived in Maricopa or Pima counties. No other age group has as great a disproportionate gender distribution as the elderly. As a result of the higher total mortality rates for males in each of the earlier periods of the lifespan, 32 percent more elderly women than men were alive in 1986.

The total elderly mortality rate did not significantly change between 1985 and 1986 (Table 3-17). The elderly experienced a 17.4 percent reduction in their 1986 total mortality rate compared to 1970. However, since 1981 the total elderly mortality rate erratically increased or decreased annually, but never by more than four percent. The greatest improvement in mortality from a specific leading cause during this decade has been for diseases of the heart, the number one killer in this age group. Cerebrovascular diseases, the third leading cause of elderly mortality, decreased substantially in the last two years, after four years of remaining relatively stable. In contrast, elderly mortality due to cancer, chronic obstructive pulmonary disease (COPD), and pneumonia/influenza have all been on an upward trend during this decade. Indeed, the mortality rates for each of these causes were at their highest level of the past six years in 1986.

Elderly women have a slight advantage over elderly men in total mortality and from each of the five leading causes of death, with the exception of stroke. In four of six years, males were less likely than females to die from cerebrovascular diseases. However, the lowest annual stroke mortality rate thus fare in this decade was recorded in 1986 for both elderly men and women. The largest cause-specific gender differential occurs in COPD mortality, albeit the gap has been narrowing. In 1986, both males and females experienced their highest rate of COPD mortality throughout the 1980's. For every elderly women that succumbed to chronic obstructive pulmonary disease in 1986, two elderly men died. Senior men and women have recently been succumbing to pneumonia and influenza at rates reflective of the early 1970's.

Total mortality and cause-specific mortality rates are not appreciably different between the elderly residing in the urban versus rural regions of the state (Table 3-18). Although mortality rates from four of the five leading causes of death and all causes are slightly higher in urban elderly, the differential is usually minimal (less than 5 percent) and does not stably favor one region over the other. The one exception is that death from pneumonia/influenza has occurred at a rate at least 13.4 percent higher for urban than rural seniors since 1983. Another clear trend in the causes of elderly mortality during this decade has been the rise in the rural death rate from malignant neoplasms. Throughout the 1980's urban cancer rates have ranged from 904 to 975 deaths per 100,000 while rural elderly cancer rates prior to 1985 had never risen into that range. However for the first time, over 900 rural elderly out of every 100,000 succumbed to cancer in 1985. Even more startling, in 1986 the elderly rural cancer rate surpassed that of the elderly urban rate, 964.2 and 958.8, respectively.

Unlike most of the other age groups, death is less likely to occur to the elderly of both genders if they reside in rural Arizona rather than in its two urban counties (Table 3-19). Examination of urban-rural genders revealed that elderly urban women were the only group to exhibit an increase in their total mortality rate between 1985 and 1986 (1.8 percent). Examination of gender-specific annual total mortality rates by urban and rural regions suggests no temporal trends thus far in the decade. The 1986 mortality rates of urban males and females and their rural counterparts were not the highest or the lowest in the 1980's.

TABLE 3-17

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG ELDERLY
(65 years and older) BY GENDER,
ARIZONA, 1981 - 1986

GENDER/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
MALE							
Diseases of heart	2086.4	2097.1	2059.3	2017.3	1937.6	1946.0	0.4
Malignant neoplasms	1186.7	1205.0	1224.7	1256.2	1237.0	1236.6	- 0.0
Chronic obstructive pulmonary disease	358.8	393.8	379.4	403.6	392.4	418.7	6.7
Cerebrovascular disease	341.2	343.2	358.0	368.7	346.7	302.2	-12.8
Pneumonia and influenza	191.3	185.4	169.9	218.0	212.2	212.8	0.3
All causes	5227.4	5262.9	5293.0	5369.9	5222.4	5197.1	- 0.5
(Number of all deaths)	(7431)	(7805)	(8166)	(8622)	(8811)	(9011)	
FEMALE							
Diseases of heart	1458.2	1506.3	1439.0	1389.6	1413.5	1384.0	- 2.1
Malignant neoplasms	695.3	706.5	694.4	713.2	725.2	751.3	3.6
Cerebrovascular disease	376.4	377.8	365.0	357.1	321.6	306.8	- 4.6
Chronic obstructive pulmonary disease	122.3	133.8	153.6	180.2	178.8	200.0	11.9
Pneumonia and influenza	140.1	117.5	113.0	143.4	146.8	165.2	12.5
All causes	3517.6	3608.0	3535.7	3584.7	3564.0	3596.8	0.9
(Number of all deaths)	(6354)	(6848)	(7042)	(7499)	(7912)	(8254)	
TOTAL							
Diseases of heart	1734.9	1765.4	1709.2	1662.2	1639.8	1625.9	- 0.8
Malignant neoplasms	911.7	925.2	925.5	949.0	946.2	960.1	1.5
Cerebrovascular diseases	360.9	352.6	361.2	362.1	332.5	304.8	- 8.3
Chronic obstructive pulmonary disease	226.5	247.8	252.1	277.2	271.0	294.1	8.5
Pneumonia and influenza	162.6	147.3	137.8	175.8	175.1	185.7	6.1
All causes	4270.6	4333.9	4302.8	4359.9	4280.1	4285.6	0.1
(Number of all deaths)	(13785)	(14653)	(15208)	(16121)	(16723)	(17263)	

1 Rates are presented per 100,000 population.
2 The five causes with the greatest number of deaths over 1981-1986 period.

TABLE 3-18

MORTALITY RATES[1] FOR THE
FIVE LEADING CAUSES[2] OF DEATH AMONG ELDERLY
(65 years and older) BY URBAN AND RURAL AREAS,[3]
ARIZONA, 1981 - 1986

AREA/CAUSE	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
URBAN							
Diseases of heart	1780.0	1784.4	1721.7	1706.7	1652.9	1667.1	0.9
Malignant neoplasms	920.2	939.6	947.6	975.2	945.4	958.8	1.4
Cerebrovascular disease	368.5	369.4	382.6	369.8	333.4	310.7	- 6.8
Chronic obstructive pulmonary disease	238.8	239.8	256.6	294.4	273.8	295.0	7.7
Pneumonia and influenza	161.1	144.2	139.0	188.5	184.3	191.1	3.6
All causes	4330.0	4346.8	4347.4	4461.0	4290.7	4330.3	0.9
(Number of all deaths)	(10751)	(11274)	(11759)	(12593)	(12816)	(13255)	
RURAL							
Diseases of heart	1584.3	1703.1	1670.6	1518.4	1580.3	1495.3	- 5.4
Malignant neoplasms	883.4	877.6	848.6	864.4	938.5	964.2	2.8
Cerebrovascular disease	335.6	340.4	298.6	337.3	325.7	286.3	-12.1
Chronic obstructive pulmonary disease	185.3	274.3	237.5	221.8	239.1	291.4	12.5
Pneumonia and influenza	147.8	157.5	132.6	134.9	143.0	168.4	17.8
All causes	4273.5	4291.4	4157.3	4037.8	4000.5	4144.0	- 1.3
(Number of all deaths)	(3034)	(3379)	(3449)	(3528)	(3907)	(4010)	
STATEWIDE							
Diseases of heart	1734.9	1765.4	1709.2	1662.2	1639.8	1625.9	- 0.8
Malignant neoplasms	911.7	925.2	925.5	949.0	946.2	960.1	1.5
Cerebrovascular disease	360.9	362.6	361.2	362.1	332.9	304.8	- 8.5
Chronic obstructive pulmonary disease	226.5	267.8	252.1	277.2	271.0	294.1	8.5
Pneumonia and influenza	162.6	147.3	137.8	175.8	175.1	185.7	6.1
All Causes	4270.6	4333.9	4302.8	4359.9	4280.1	4285.6	0.1
(Number of all deaths)	(13785)	(14653)	(15208)	(16121)	(16723)	(17265)	

1 Rates are presented per 100,000 population.
2 The five causes with the greatest number of deaths over 1981-1986 period.
3 Maricopa and Pima Counties comprise Arizona's urban areas while the remaining counties represent rural areas.

TABLE 3-19

MORTALITY RATES[1] AMONG ELDERLY
(65 years and older) BY GENDER IN URBAN AND RURAL AREAS[2]
ARIZONA, 1981-1986

Area/Gender	1981	1982	1983	1984	1985	1986	Percent Change 1981-1986
URBAN							
Male	5776.1	5724.3	5565.6	5538.4	5389.3	5561.7	- 3.6
Female	3544.4	3402.7	3362.9	3479.2	3491.9	3609.9	1.8
Total	4333.5	4244.8	4147.4	4441.5	4240.7	4355.9	0.4
RURAL							
Male	4781.1	4583.4	4529.5	4419.2	4545.9	4511.6	- 5.6
Female	3418.2	3414.4	3375.3	3334.3	3466.8	3596.7	+ 5.2
Total	4075.9	4291.4	4127.3	4075.8	4038.1	4144.3	+ 1.7
STATEWIDE							
Male	5527.4	5341.9	5245.3	5148.9	5225.4	5147.1	- 5.9
Female	3517.4	3418.1	3359.7	3334.7	3544.3	3596.8	3.3
Total	4275.4	4233.9	4102.8	4054.8	4284.1	4233.4	5.1

1 Rates are presented per 100,000 population.

2 Maricopa and Pima counties comprise Arizona's urban areas while the remaining counties represent its rural areas.

SPECIAL SECTION

DEATHS FROM MAJOR RESPIRATORY CAUSES

Malignant neoplasms or cancers are the second leading cause of death in Arizona and lung cancer (ICD=162) accounted for 26 percent of cancer deaths in 1986. Chronic obstructive pulmonary disease or COPD (ICD=490-496) and pneumonia (ICD=480-486) are the fifth and sixth leading causes of death respectively and the age-adjusted mortality rates of both causes for Arizona residents consistently exceed national rates. Moreover, the 1986 age-adjusted death rates from COPD and pneumonia were the highest of the last six years. These three major respiratory causes were responsible for the deaths of 3,811 Arizonans in 1986, 751 more deaths than the combined deaths from stroke and accidents, the third and fourth leading causes of death, respectively.[e]

The increasing and excessive (relative to the U.S.) mortality toll exacted by these respiratory causes prompted an epidemiologic exploration of whether deaths from these causes displayed significant geographic and/or seasonal patterns. Individuals with serious respiratory disease are particularly susceptible to air quality characteristics.[11] Ambient air standards set by the Environmental Protection Agency (EPA) represent levels of air contaminants to which the general population may be exposed with some symptomatic effects.[12] However, those subpopulations with serious respiratory disease may experience exacerbation of disease and compromised survival at above-standard levels of air contaminants.[13] Since the risk of exposure to polluted air varies by area and season, the particular issue examined was whether air quality characteristics were significantly related to the probability of survival from one of these respiratory causes after the disease was acquired. An unfortunate reality is that air quality standards set by the EPA, especially for carbon monoxide (CO), are regularly violated during certain months in Phoenix. In fact, one monitoring site for CO in Phoenix at Indian School Road and 35th Ayenue annually has registered the largest number of 8-hour exceedances of the EPA standard for CO in the United States.[14]

e The leading cause of death, heart disease, claimed the lives of 8,050 Arizona residents in 1986.

11 Mitchell, R.S. et. al. Health effects of urban air pollution. JAMA, 1979, 242, 1163-1168.

12 Robertson, G. and Lebowitz, M.D. Analysis of relationships between symptoms and environmental factors over time. Environmental Research, 1984, 33, 130-143.

13 Shy, C.M., Goldsmith, J.R., Hachney, J.D., Lebowitz, M.D., and Menzel, D.B. Health effects of air pollution. New York, N.Y.: American Lung Association, 1978.

14 Watterson, O.M., Gersten, J.C., and Teitelbaum, F. Health effects of air pollution in two Phoenix neighborhoods. Research Notes, Arizona Department of Health Services, December 1985.

f East Valley is the SMSA cities of Chandler, Mesa, Paradise Valley, Scottsdale and Tempe.

g Glendale and Peoria are the SMSA cities in western Maricopa County.

h Phoenix has more monitoring stations than either the East Valley cities or

Carbon monoxide is the prime air pollutant to which Phoenicians are exposed at unhealthy levels, an experience not shared with the same frequency and intensity by persons residing in other adjacent cities of the Phoenix Standard Metropolitan Statistical Area (SMSA) or the Tucson SMSA (Table 4-1). Metropolitan Phoenix in the years 1984 to 1986 had three to 20 times more days in which the CO standard was exceeded than its SMSA cities in the east[f] or west[g] portions of the county and the Tucson SMSA. Moreover, the number of days with a recorded CO exceedance in Phoenix nearly doubled between 1984 and 1986, a worsening trend not observed in eastern or western SMSA cities[h] or the Tucson SMSA. In fact, the Tucson SMSA show a dramatic decline in recordings of CO exceedance in that time period. With regard to the two other air pollutants regularly monitored, ozone and total suspended particulates (TSP), Phoenix is much less divergent from its other SMSA cities. Compared to Phoenix, Glendale/Peoria had more exceedances of the ozone standard in 1985 and the East Valley more exceedances of the TSP standard in 1986. Moreover, the TSP exceedances in Tucson SMSA were also greater than those in Phoenix in 1985 and 1986.

Although monitoring of air quality characteristics is limited in counties other than Maricopa and Pima, hereafter referred to as the rural region of the state, data from 1984 onward for Flagstaff, Prescott, Sierra Vista, and Yuma indicate no exceedances of the CO standard in those areas.[15] Rural Arizona is unlikely to experience excessive CO levels, since the essential ingredients for that pollutant, i.e., emissions from hydrocarbon-fueled high density traffic and climatic inversions, are missing.

In contrast, Phoenix, as the hub city of its SMSA, has those essential ingredients as its CO exceedance rate clearly indicates. However, several steps must be taken to explore the association, if any, between that aspect of air quality and compromised survival from major respiratory diseases. The first was to determine if the expected pattern of geographic differences in mortality did occur for the major respiratory causes and did not occur for causes of death in which inhalation of air pollutants would seem to play a minor role in exacerbation of disease and consequent fatality. The latter diseases were considered to comprise a control for the usual urban versus rural disadvantage in mortality and morbidity from many diseases.[16] The diseases comprising the control set were diseases of the musculoskeletal system and connective tissue (ICD=710-739) and selected cancers of the digestive system, peritoneum, bone, connective tissue and reproductive organs.[i]

The first specific question examined was whether Phoenix relative to its adjacent SMSA cities, the Tucson SMSA, rural Arizona, and the total state had higher death rates from the three major respiratory causes and lower death rates from the "control causes" in 1985 and 1986. If the prediction was upheld that Phoenix had higher death rates from the

Glendale/Peoria (4 vs. 3 or 1 respectively).

15 Valley National Bank of Arizona. Arizona Statistical Review, 43rd Annual edition, September 1987.

16 Demopoulos, H.B. and Gutman, E.G. Cancer in New Jersey and other complex urban/industrial areas. Journal of Environmental Pathology and Toxicology, 1980, 3, 219-235.

i The ICD codes of the selected cancers were 152, 153, 154, 156, 158, 170, 171, 180, and 182-187.

respiratory causes and lower mortality rates for the control causes, then an examination of whether respiratory mortality was related to Phoenix CO air pollution was warranted. No more than one percent of the deaths from the three respiratory causes or the control causes occurred among people younger than 25 years. Therefore, age-adjusted mortality rates for adults at least 25 years of age were calculated for each of the three respiratory causes and the set of control causes of death for each region and the total state for each year (Table 4-2). The ratio between the regional age-adjusted death rates (i.e. the standardized rate ratio) using Phoenix as the constant numerator indicated if Phoenix was higher or lower than the contrast region. Twenty-two of the 30 comparisons between Phoenix and the other regions on the three respiratory causes in two years were in the predicted direction (Figure 4-1). In other words, death rates from major respiratory causes tended to be significantly higher in Phoenix than other areas of the state (p=.01).[j] In contrast, while no significant difference in directionality was found between Phoenix and the other regions on the control causes, in six out of ten comparisons the Phoenix mortality rate was lower than the contrast group's mortality rate. The opposing pattern of higher versus lower mortality for the respiratory versus control causes respectively was not replicated for the SMSA of Tucson. In fact, the greatest number of comparisons in which Tucson was higher than the contrast area occurred for the control rather than any one of the respiratory causes. The phenomenon may stem from the fact that a major national center for cancer treatment and research and a University-based medical center are located in Tucson. People may establish residence in Tucson from another area of this state or another state in order to receive care at these facilities, and Tucson SMSA is thus their recorded residence at time of death. A fact lending support to this speculation is that death from the control causes occurs on the average of 2.3 years earlier in Phoenix than the Tucson SMSA (median ages of 69.3 and 71.6 years respectively).

That Phoenix as a geographic area has significantly higher mortality rates for major respiratory causes but not for the control causes in no way implicates its air quality characteristics. Many other properties of Phoenix and its residents relative to the other regions could explain this geographic differential.[17] The next step in exploring if there is any relation between air quality and compromised survival in Phoenix requires a finer examination of variations in both air quality and mortality. To accomplish this, each month between January 1985 and December 1986 was characterized as to the percent of days in the month in which at least a 50 percent exceedance or a 50 percent reduction below the EPA standard for CO was recorded at one of the CO monitoring stations in Phoenix. Months in which the majority of days were at or above the criterion of exceedance were considered high pollution months, while months with a majority of days meeting the reduction criterion were low pollution months. In these two years, 15 months met the high and nine months the low definition (Figure 4-2).

The percent of annual deaths which occurred in each month was then determined for each of the respiratory causes and the control causes. If there is no monthly variation in proportional contribution to the annual death total, 8.3 percent of deaths should occur monthly, with any variation from this expectation strictly a chance phenomenon. Indeed, when deaths from all causes other than major respiratory diseases were examined monthly for Phoenician residents, only two months deviated from the expected value of its proportional contribution by at least ten percent. In sharp contrast, seven months so

[j] The statistical test used was the sign test.

[17] See Lippmann, M. and Lioy, P.J. Critical issues in air pollution epidemiology. Environmental Health Perspectives, 1985, 62, 243-258.

deviated for lung cancer deaths, nine months for COPD deaths, eight months for pneumonia deaths, and eight months for control cause deaths. In other words, substantial monthly variation in the proportional contribution to annual deaths existed for the four causes.

The next issue was whether the monthly variation in deaths was related to the month's air quality designation as high or low (Table 4-2). In other words, was the percent of deaths above the expected value of 8.3 percent in high pollution and at or below the expected value in low pollution months? Using the criterion that the monthly percent of deaths was either above or at/below the expected value for at least two of the three respiratory causes, a significant relation ($p \leq .001$) between monthly proportional contribution to total respiratory deaths and the air pollution character of the month in terms of CO levels was found for Phoenix residents (Table 4-3). As predicted, no such significant relation was found between the control causes' monthly variation and the monthly differentiation by CO pollution levels. The factors with which monthly mortality from these causes may covary are now unknown.

The criterion used above to test for a significant relation was that at least two of the three respiratory causes showed monthly percents congruent with the air quality of the month. The average percent excess in monthly deaths among those observations congruent with high pollution months was 23.5 percent, while the average percent reduction in monthly contribution for observations congruent with low pollution months was 20.0 percent. Moreover, in five of the 15 high pollution months, all three respiratory causes showed excess percentages of deaths, a significant finding ($p=.023$).[k] In addition, in three of the nine low pollution months, a percent of deaths at or below expectation was seen for each of the three respiratory causes, a marginally significant result ($p=.073$) (Table 4-4).

Among the three respiratory causes, lung cancer and COPD showed smaller ranges in monthly proportional contributions across the 24-month period than did pneumonia. Monthly death percents for lung cancer ranged from a high of 11.5 percent in January 1986 to a low of 4.9 percent in October 1986. The corresponding range for COPD was similar, with a high of 12.5 percent in January 1985 and a low of 5.0 percent in September 1985. In contrast, the range was nearly twice as great for pneumonia, which showed a high of 17.0 percent in February 1986 and a low of 3.9 percent in July 1985.

These ranges in proportional contributions hint at the form assumed by the significant relationship between monthly air quality and mortality from respiratory causes. A reasonable speculation is that a seasonal cycle with the shape depicted in Figure 4-3 operates in the following manner. In the low CO pollution months of late spring and summer (May to August), mortality from these causes is at its lowest of the year. September heralds the beginning of the high CO pollution season, but mortality remains low since the exacerbation of disease process is probably only starting. As exposure cumulates over September, October and into November, disease could progressively worsen from the long-term physiologic burden imposed. November usually is the month in which increases in mortality are first seen, but exposure to unhealthy air, often at the highest levels, continues through the winter months of December, January and February. Excess mortality reaches its peak in this period. However, the cumulative exposure appears to exert its effects on mortality, especially from pneumonia, beyond the highest pollution months and some exposure, although at relatively reduced levels,

k The exact probability was calculated using the binomial distribution.

still occurs in March and April. With the beginning of summertime weather, mortality drops and the cycle begins anew.

Public concern about air quality has sparked new efforts to try to reduce levels of exposure. An example of these efforts is the campaign to have drivers voluntarily elect not to drive one day in five launched by the Clean Air Force. The Arizona Legislature has indicated that measures to reduce pollution are a top priority issue of the upcoming session. The results presented here, although only correlational, hopefully may add to the body of evidence supporting these new directions.

TABLE 4-1

NUMBER OF DAYS EXCEEDING THE STANDARDS OF AIR QUALITY BY AREA, 1984 - 1986

Pollutant		Phoenix[1]	East Valley[2]	Glendale -Peoria[3]	Tucson SMSA[4]
Carbon Monoxide[5]					
	1984	15	2	0	5
	1985	20	0	0	1
	1986	28	2	0	0
Ozone[6]					
	1984	7	1	1	0
	1985	2	1	3	0
	1986	4	2	0	0
Particulates (TSP)[7]					
	1984	4	1	0	3
	1985	3	2	2	5
	1986	1	2	1	4
Simultaneous Exceedence for CO and TSP[8]					
	1984	0	0	0	0
	1985	0	0	0	0
	1986	1	1	0	0

1 Based on readings taken by at least one or more of the monitoring stations located in Central, West, South and North Phoenix.

2 Based on readings taken by at least one or more of the monitoring stations located in Scottsdale, North Scottsdale/Paradise Valley, and Mesa.

3 Based on readings taken at the monitoring station in Glendale.

4 Based on readings taken from the four monitoring stations in Tucson.

5 The standard of CO concentration is 9 parts per million.

6 The standard of Ozone concentration is .125 parts per million.

7 The standard of TSP (Total Suspended Particulates) concentration is 260 micrograms per cubic meter.

8 Simultaneous exceedance of CO and Ozone is highly unlikely due to the fact that different climatic conditions favor the formation of these

TABLE 4-2

CRUDE AND STANDARDIZED[a] OR AGE-ADJUSTED ADULT[b] MORTALITY RATES FOR SPECIFIC CAUSES BY GEOGRAPHIC AREAS, 1985 AND 1986

Cause	AREA					
	Phoenix	East[c] Valley	Glendale/ Peoria	Tucson SMSA	Rural	Total State
Lung Cancer						
1985 SR[d]	91.9	81.4	107.7	82.9	77.1	79.5
1986 SR	89.4	86.4	81.7	84.0	82.9	79.6
1985 CR[e]	74.2	71.3	85.7	78.0	77.3	78.3
1986 CR	72.9	75.5	86.1	78.8	83.6	78.7
COPD						
1985 SR	83.1	69.8	78.0	75.5	58.6	66.4
1986 SR	75.0	78.3	103.1	85.0	71.6	72.0
1985 CR	66.6	62.7	60.6	68.8	65.2	67.7
1986 CR	59.9	68.3	82.3	76.2	77.9	73.7
Pneumonia						
1985 SR	45.2	40.2	53.6	51.6	27.9	36.3
1986 SR	49.3	45.8	80.0	57.3	34.3	41.2
1985 CR	37.5	35.5	43.4	41.7	34.3	38.8
1986 CR	40.7	40.9	66.3	46.8	42.7	43.8
3 "Control" Causes						
1985 SR	73.2	79.7	84.0	87.1	62.9	68.6
1986 SR	78.6	83.1	93.5	87.0	71.0	73.0
1985 CR	60.1	70.7	68.6	77.5	66.4	69.8
1986 CR	63.8	67.1	73.2	79.3	75.7	74.2

a The standard population used was the 1980 U.S. Census for Arizona. The denominators for the Phoenix SMSA cities came from the 1985 special census. The denominators of the other regions were population estimates from Population Statistics Units, DES.

b Adults are persons 25 years of age or older.

c The East Valley is the cities of Chandler, Mesa, Paradise Valley, Scottsdale and Tempe.

d SR = Standardized or Age-adjusted Mortality Rate.

e CR = Crude Mortality Rate.

TABLE 4-3

PERCENT OF ANNUAL DEATHS BY MONTH AND CAUSE AND POLLUTION STATUS[a] OF MONTH, PHOENIX, 1985, 1986

MONTH/YEAR	STATUS[a]	% ANNUAL DEATHS				
		LUNG CANCER	COPD	PNEUMONIA	CONTROL	OTHER[b]
12/86	HIGH	9.0	7.4	9.9	4.1	8.3
11/86	HIGH	8.7	9.2	5.8	7.2	7.7
10/86	HIGH	4.9	7.1	7.6	8.1	8.0
09/86	HIGH	6.9	6.2	4.0	8.4	7.7
08/86[c]	LOW	8.2	6.5	5.8	7.5	8.4
07/86	LOW	8.2	7.7	9.0	11.0	8.2
06/86	LOW	8.7	6.8	6.7	9.5	8.4
05/86	LOW	11.3	8.3	4.9	6.3	8.4
04/86	LOW	6.9	9.8	5.4	9.5	8.7
03/86	HIGH	7.7	10.2	8.5	9.2	8.6
02/86	HIGH	7.9	9.5	17.0	5.8	8.1
01/86[d]	HIGH	11.5	11.4	15.2	11.2	7.7
12/85[d]	HIGH	8.5	9.5	11.3	7.4	9.3
11/85[d]	HIGH	8.8	8.4	8.8	7.4	8.4
10/85	HIGH	9.5	8.6	4.9	8.3	7.5
09/85	HIGH	6.5	5.0	6.4	7.7	8.4
08/85[c]	LOW	7.3	8.1	6.9	8.0	7.8
07/85[c]	LOW	6.0	5.6	3.9	7.4	8.5
06/85	LOW	10.1	7.0	7.8	9.2	7.9
05/85	LOW	7.5	7.0	9.8	8.0	8.3
04/85[d]	HIGH	9.8	8.9	10.8	6.2	7.4
03/85	HIGH	9.5	10.0	5.9	11.1	8.4
02/85	HIGH	5.5	9.5	12.3	8.3	8.4
01/85[d]	HIGH	10.8	12.5	11.3	11.1	9.3

a Pollution status is assigned in terms of whether the majority of days in month record a CO level $>$ 50% of the EPA standard (HIGH) or record $\leq$ 50% of the EPA standard for CO (LOW).

b Other is all causes of death other than lung cancer, COPD and pneumonia.

c Months in which the percents of annual deaths for all three respiratory causes were at or below the expected monthly value.

d Months in which the percents of annual deaths for all three respiratory causes were above the expected monthly value.

TABLE 4-4

CHI-SQUARE BETWEEN PHOENIX MONTHLY AIR POLLUTION QUALITY AND MONTHLY PERCENT CONTRIBUTION TO ANNUAL DEATHS FOR CAUSE

	Control Causes		
	High Pollution Months	Low Pollution Months	
Above EV[b]	5	4	9
At or Below EV	10	5	15
	15	9	24

$X^2 = 0.27$, $p \geq .50$

	Respiratory Causes		
	High Pollution Months	Low Pollution Months	
Above[a] EV	12	1	13
At or Below EV	3	8	11
	15	9	24

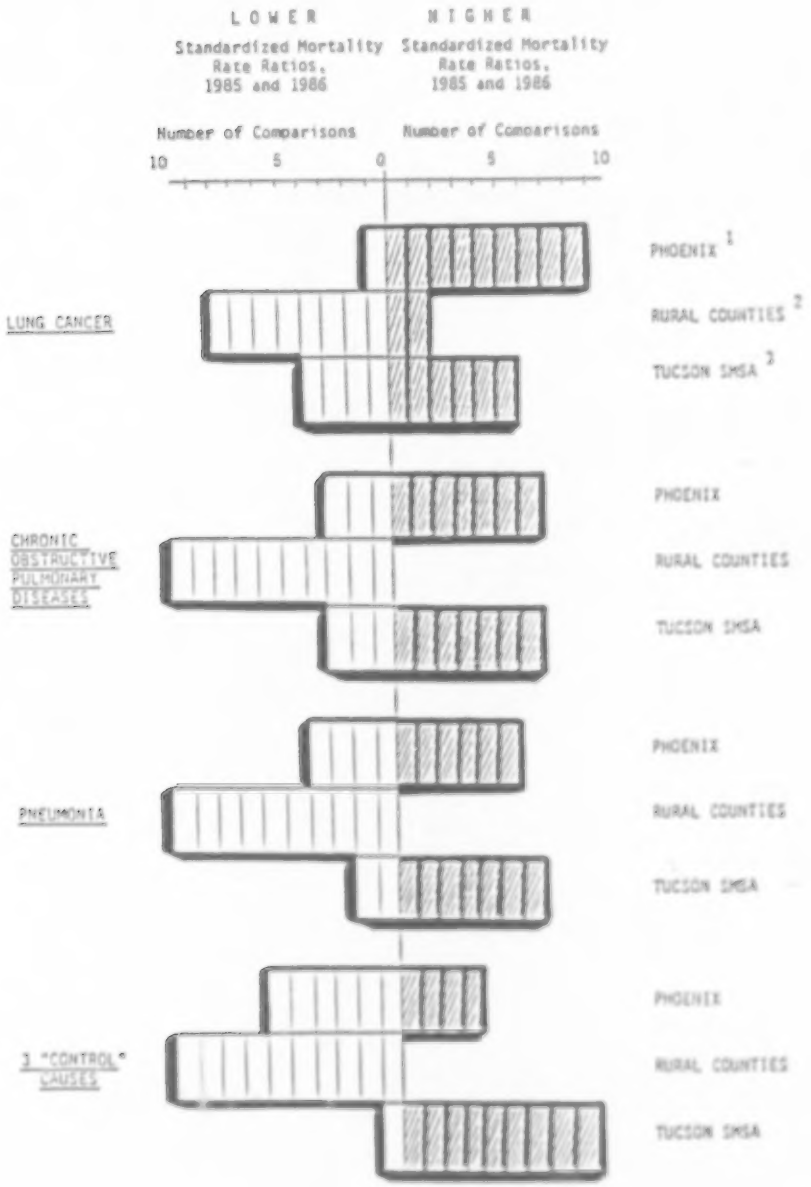
$X^2 = 10.88$, $p \leq .001$

a The monthly percent for at least two of the three respiratory causes had to be either above the expected monthly percent or at or below the expected value.

b EV is the expected value of 8.3 percent for a month.

Figure 4-1

NUMBER OF COMPARISONS BY CAUSE IN WHICH STANDARDIZED MORTALITY RATE RATIOS FOR PHOENIX, TUCSON SMSA AND RURAL COUNTIES ARE HIGHER OR LOWER THAN CONTRAST AREAS, 1985 AND 1986



[1]Phoenix relative to East Valley, Glendale-Peoria, Tucson SMSA, Rural Counties and Total State.

[2]Rural Counties relative to Phoenix, East Valley, Glendale-Peoria, Tucson SMSA and Total State.

[3]Tucson SMSA relative to Phoenix, East Valley, Glendale-Peoria, Rural Counties and Total State.

Figure 4-2

PERCENT OF DAYS EACH MONTH WITH CO RATE EXCEEDANCES, PHOENIX, 1985 - 1986

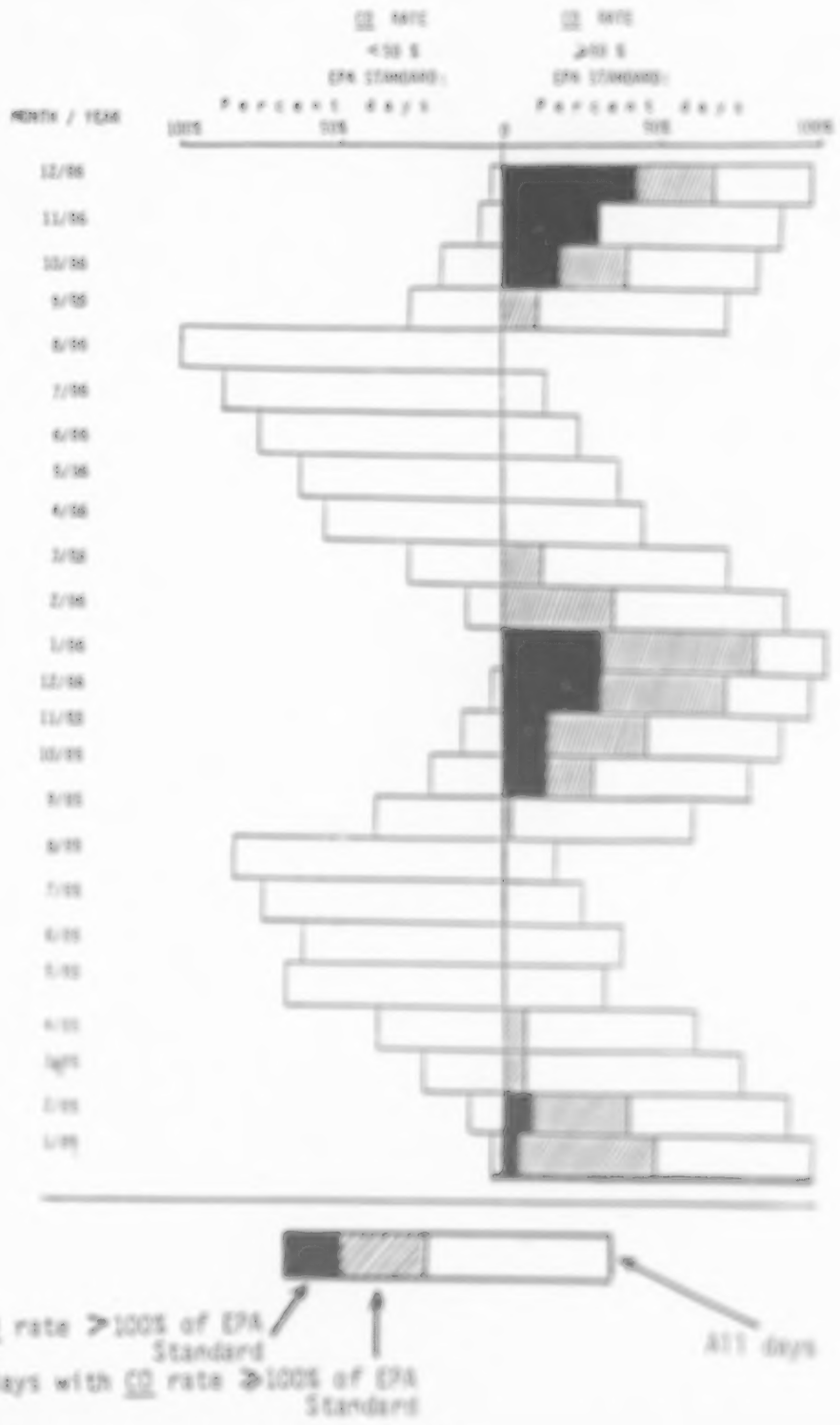
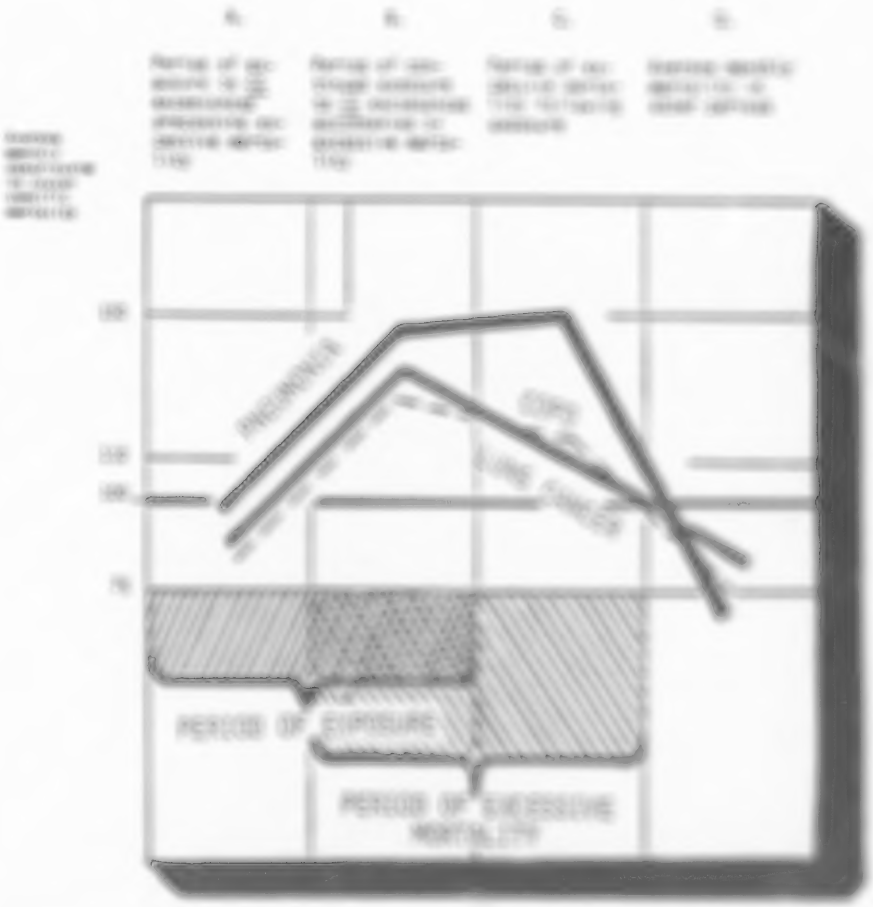


Figure 4-3

SEASONAL VARIATION IN CO POLLUTION EXPOSURE AND RESPIRATORY MORTALITY BY CAUSE, PHOENIX, 1985 - 1986



MORBIDITY

Data on morbidity, states of disease and disability in the population, now are obtained for the whole population in the state only for certain communicable or infectious diseases which must be reported by law. Registries which record all cases of cancer or birth defects that occur in the state are under development and relevant morbidity data from them will be available for future reports. At present, cases of cancer and birth defects are reported voluntarily by hospitals and neither registry has complete participation. Thus, this section is now limited to a discussion of different types of notifiable disease.

Non-Sexually Transmitted Diseases

Vaccines can prevent the major childhood diseases of measles, mumps and pertussis. Yet, in 1986 all three of these diseases occurred at the highest level of the past six years (Table 5-1). Over 60 percent more people contracted pertussis and mumps in 1986 than in 1985. Moreover, Arizona had the highest incidence of these three diseases among the eight states in the mountain region (the other seven states are Montana, Idaho, Wyoming, Colorado, New Mexico, Utah and Nevada).[18] Indeed, Arizona residents accounted for 83 percent of the cases of measles, 78 percent of the cases of mumps, and 26 percent of the cases of pertussis that occurred in all the mountain region states in 1986. The six-year time trend of reports of these three vaccine preventable diseases showed a precipitous rise from a total of 59 cases in 1981 to 539 cases in 1986, a ninefold increase. Cases of chickenpox slightly declined between 1985 and 1986, but the 1986 incidence was still almost double the 1983 incidence of this disease.

Three major national issues threaten maintenance of the high levels of immunization necessary for effective control of the vaccine preventable diseases.[19] The cost of vaccines has risen sharply and will continue to do so. The purchase price to ADHS of vaccines for a full immunization program for a child climbed from less than $5 in 1980 to about $33 in 1984 and will probably reach $65 by 1990. The issue of the responsible or liable party for the rare but serious complications that may occur with many vaccines has not been resolved and largely contributes to the accelerating cost. An allied contributory issue concerns the fair compensation accorded to individuals injured by a required vaccine. Many parents do not immunize their child due to fear of injury and ways to educate parents about relative risks and benefits so informed choice is possible need greater study. While the liability and compensation issues remain undecided in the U.S. and thus continue to threaten children's health, Japan, the United Kingdom, Denmark, West Germany, Switzerland, and France had all passed national compensation laws for vaccine-related injuries by early 1985.

In the past year, aseptic, H Flu and bacterial meningitis more frequently occurred. The rise in occurrence was particularly steep for bacterial meningitis with 5.6 times more cases in 1986 than in 1985. The six-year record high level of occurrence of these three types of meningitis meant that 2.7 times more people were afflicted in 1986 than in 1981. The enteric diseases of amebiasis and campylobacteriosis also exacted their highest sickness toll of the last six years in 1986. Neither giardiasis nor salmonellosis

18 CDC. Cases of specified notifiable diseases, United States, Weeks ending January 3, 1987 and December 28, 1985. MMWR, January 9, 1987, 35, 811-813.

19 Chin, J. (Ed.). Communicable disease control. In Maxcy-Rosenau, Public Health and Preventive Medicine, 12th Edition. Norwalk, CT.: Appleton-Century-Crofts, 1986.

occurred at record high levels in 1986, but the frequency of the former was 2.7 times higher than it was in 1981. Coccidioidomycosis or valley fever is considered endemic to the southwest area, but its incidence progressively declined over the six years. The 1986 incidence of valley fever was 50 percent lower than the 1981 incidence. However, since the beginning of this decade, case-fatality ratios for valley fever were the highest recorded in the past 40 years. Prior to 1980, case-fatality ratios for this disease were usually less than three deaths per 100 cases rather than the ten or greater deaths per 100 cases of the 1980's. The much higher case fatality ratios stemmed from a steady mortality rate co-occurring with a declining incidence rate.

The incidence rate of Hepatitis B in 1985 was 22.8 cases per 100,000 population. That rate further climbed in 1986 to 27 cases per 100,000 population, an 18.4 percent increase in one year. More than 1,200 people became ill with Hepatitis A in 1986 and 1985 and the overall toll exacted by all forms of hepatitis was 2.2 times greater in 1986 than 1981. The number of cases of tuberculosis declined slightly between 1986 and 1985, but Arizona residents accounted for more than 40 percent of all tuberculosis cases in the western region states in 1986 as they did in 1985. Rabies in animals in 1986 continued to pose a significant threat to the human population, but fortunately no people contracted the disease in that year. Among the mountain region states, animal rabies was twice as prevalent in Montana and Wyoming as it was in Arizona in 1986.

Sexually Transmitted Diseases

Only gonococcal pelvic inflammatory disease and the penicillin-resistant form of gonorrhea (PPNG) occurred with greater frequency in 1986 than in any of the prior five years. Despite the six-year record high occurrence of gonococcal pelvic inflammatory disease (GPID), the reported incidence of this disease remained 50 percent below the target incidence of 60 cases per 100,000 females set in the year 1990 by the public health service.[20] However, several other sexually transmitted infectious organisms can cause pelvic inflammatory disease (PID) other than gonococcus, the most notable of these being Chlamydia trachomatis. Chlamydial infections' role in one-quarter to one-half of PID cases led the public health service and CDC to broaden the original 1990 objective regarding pelvic inflammatory disease.[21] However, chlamydial infections only became a reportable sexually transmitted disease in Arizona in 1987 so its involvement in pelvic inflammatory disease among Arizona women must await future reports.

More than 400 fewer cases of gonorrhea were reported in 1986 than 1985 resulting in the second lowest frequency of occurrence of this disease in the past six years. The 1986 incidence rate of gonorrhea in Arizona of 240 cases per 100,000 population was 35 percent lower than the national rate and, even more importantly, met and surpassed the 1990 national objective of no more than 280 cases per 100,000 population. In contrast, while the reported occurrence of primary and secondary syphilis also declined between 1985 and 1986, the 1986 incidence rate of 7.6 per 100,000 population had not met the 1990 objective of seven cases per 100,000 population. Unlike gonorrhea and syphilis but like GPID and PPNG, the number of reported cases of genital herpes also increased in the

20 CDC. Progress in achieving the national 1990 objectives for sexually transmitted diseases. MMWR, April 3, 1987, 36, 173-176.

21 CDC Update: Chlamydia trachomatis infections: Policy guidelines for prevention and control. Urban Health, 1985, July/August, 10-14.

past year. The declines seen for certain STD's were counterbalanced by increases in other STD's so that the net toll exacted by this group of reported diseases was only marginally less in 1986 than 1985 (11,352 versus 11,550 cases respectively).

Moreover, the one-year change in incidence of reported STD's differed by age, gender and county (Table 5-2). More persons 19 years of age or younger contracted one of the reported sexually transmitted diseases in 1986 than 1985, while fewer cases were recorded in the past year among persons at least 20 years of age. Fewer males contracted one of the reported STD's but more females did, primarily because of PID but also because of syphilis. Between 1985 and 1986 the rate of reported STD's rose 48 percent in Navajo County and more than doubled in both Gila and Yavapai Counties. The incidence rate of reported STD's showed its largest drop in Apache County but its rate still was one of the two highest rates in the state. Smaller declines in incidence were seen for Cochise, Maricopa, Pima, Pinal, and Santa Cruz Counties. Only three counties declined in the incidence rate of both syphilis and gonorrhea — Apache, Maricopa and Pima.

Acquired Immune Deficiency Syndrome (AIDS)[1]

In 1986, 122 Arizona residents were diagnosed and reported with AIDS for an annual incidence rate per 100,000 population of 3.6 (Table 5-3A). The incidence of persons with AIDS is still considerably (33 percent) lower in Arizona than the nation which had a 1986 incidence rate of 5.4. Among the 122 people diagnosed with the dread disease in 1986, one was a child. Adults between the ages of 30 and 39 had an annual incidence of the disease twice as high as adults in their forties or twenties. The 122 new people reported with symptoms of the disease in 1986 brought the cumulative total of reported cases in the state since the first case report in 1981 to 222. Clearly, the number of people in Arizona diagnosed and reported with AIDS during the five-year period between 1981 and 1985 was less than the number in 1986 alone. Nearly nine out of ten (88 percent) of the people reported with AIDS prior to 1986 had died by the end of 1986.

The largest concentration (70 percent) of people reported with AIDS from 1981 through 1986 resided in the largest metropolitan county, Maricopa, and an additional 25 percent in Pima, the other metropolitan county. In January 1987, Arizona law required reporting of antibody positive tests to human immunodeficiency virus (HIV) to ADHS. In addition, in September 1987 the revision of the case definition of AIDS by the Centers for Disease Control broadened the criteria for positive identification of the disease in people.

The new case definition added to the increasing occurrence of the disease, so that Maricopa County Health Department alone recorded a cumulative total of 243 people with AIDS and 135 people with AIDS-Related Complex (ARC) as of October 30, 1987. Testing for antibody seropositivity to HIV in the county from 1985 through this date resulted in 271 individuals with positive results. Unsafe gay or bisexual practices were the sole high risk activities engaged in by 76 percent of the total count of men in Maricopa County with AIDS, 65 percent of the men with ARC, and 63 percent of male HIV seropositive individuals (Table 5-3B). Intravenous (IV) drug use, either by itself or in

[1] Data for this section on AIDS were obtained from the AIDS Epidemiology Section, ADHS Division of Disease Prevention Services and Maricopa County Health Department Disease Control Services. The latter data were distributed at the AIDS in the Workplace workshop sponsored by the Greater Phoenix Affordable Health Care Foundation in November 1987.

combination with gay/bisexual practices, was the high risk activity implicated in 13 percent of the male AIDS cases and 22 percent of both ARC cases and positive HIV antibody test results among males.

Females have double the proportional representation among cumulative counts of Maricopa County people with ARC or HIV antibody positive results than people with AIDS (6 and 7 versus 3 percent, respectively). Among the 38 Maricopa County women with AIDS, ARC, or HIV seropositivity through October 30, 1987, the high risk activity underlying their status was not known for four. Among those for whom it was known, engaging in heterosexual behaviors was the most common (38 percent) followed by use of drugs intravenously (35 percent) and receipt of a blood transfusion (27 percent). Blood transfusion products (e.g., Factor VIII) are required frequently for disease management and survival by people with hemophilia, an inherited disease which occurs only in males, and three percent of males with AIDS, six percent of males with ARC, and five percent of male HIV seropositive individuals had hemophilia.

As stated earlier, statewide the incidence of AIDS was highest among people in their thirties. As expected, the same finding holds for people with AIDS in Maricopa County and also applies to county residents with ARC. However, among people voluntarily tested who had HIV antibody seropositivity, the 20 to 29 age group was most prevalent (41 percent). Further, four percent of known seropositive people in the county were less than 20 years old.

TABLE 5-1

NUMBER OF REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY CATEGORY,
1981 - 1986

DISEASE	NUMBER OF CASES					
	1981	1982	1983	1984	1985	1986
Vaccine Preventable						
Measles	7	17	1	1	241	252
Mumps	39	63	97	203	127	209
Pertussis	13	27	32	27	49	78
Rubella	25	31	8	5	1	2
Chickenpox[1]	-	182	2584	5827	5255	4980
Central Nervous System						
Aseptic Meningitis	76	33	70	71	89	153
H Flu Meningitis	62	50	63	56	98	117
Bacterial Meningitis	24	15	24	24	30	168
Meningococcal Meningitis	21	18	20	12	23	16
Viral Encephalitis	25	16	12	13	17	19
Enteric						
Amebiasis	26	35	31	50	40	69
Campylobacteriosis	279	343	539	566	565	587
Giardiasis	356	435	746	1432	1006	965
Salmonellosis	369	404	498	353	416	454
Shigellosis	962	740	928	886	787	912
Typhoid	10	8	19	3	3	9
Fungal						
Coccidioidomycosis	342	251	211	211	191	173
Hepatitis						
Hepatitis A	503	627	919	777	1239	1427
Hepatitis B	191	269	365	486	719	890
Non-A Non-B Hepatitis[2]	-	63	101	138	237	188
Unspecified	530	267	198	151	171	151
Sexually Transmitted[3]						
Genital Herpes[4]	1078	1563	1226	853	998	1061
Gonorrhea	8354	8668	8477	7676	8485	8030
Gonococcal PID[5]	180	372	346	335	453	464
PPNG[6]	7	12	23	19	25	36
Syphilis(P&S)[7]	69	178	177	239	311	252
Syphilis - Total	369	421	501	659	757	696
Tuberculosis						
Pulmonary TB	288	245	213	222	219	215
Total TB	342	300	264	273	271	261
Zoonotic						
Human Rabies[8]	1	0	0	0	0	0
Animal Rabies	30	60	35	54	124	102
Malaria	9	13	8	11	12	15
Plague	3	5	10	2	0	1
Tularemia	2	1	1	4	4	1
Other						
Reyes Syndrome	4	1	1	4	4	3
Toxic Shock Syndrome	3	3	4	12	13	9

1 Chickenpox not reported prior to 1982.
2 Non-A Non-B Hepatitis not reported prior to 1982.
3 STD data obtained from Centers for Disease Control.
4 No data available in 1980 for genital herpes or gonococcal PID.
5 PID is pelvic inflammatory disease.
6 PPNG is penicillase producing neisseria gonorrhea or a penicillen-resistant form of gonorrhea and was not reported prior to 1981.
7 Primary and secondary syphilis only.
8 1981 case contracted in New Mexico, expired in Tucson.

TABLE 5-2

ARIZONA RESIDENTS CASES AND RATES[1] OF SYPHILIS, GONORRHEA, AND ALL STD's[2] BY AGE, GENDER, AND COUNTY AND RATES[2] BY COUNTY[3], 1986

	SYPHILIS		GONORRHEA		ALL STD	
AGE	N[3]	RATE	N	RATE	N	RATE
0-14 Years	7	-	120	14.9	160	19.9
15-19 Years	64	26.0	1,830	744.4	2,444	944.2
20-24 Years	137	50.0	2,823	029.7	3,955	1,443.6
25-29 Years	141	44.2	1,674	525.1	2,369	743.2
30-34 Years	100	34.8	806	280.7	1,165	405.7
35-39 Years	72	28.8	366	146.6	555	222.3
40+ Years	176	15.0	411	35.1	704	60.0
GENDER	N	RATE	N	RATE	N	RATE
Males	415	25.1	4,999	302.7	6,234	377.5
Females	277	16.3	3,021	177.7	5,108	300.4
COUNTY[4]	N	RATE	N	RATE	N	RATE
Apache	49	81.0	383	633.1	452	747.1
Cochise	16	16.4	106	108.6	129	132.2
Coconino	34	38.2	209	235.0	471	529.5
Gila	14	35.3	28	70.5	103	259.4
Graham	7	28.5	15	61.1	49	199.7
Maricopa	314	16.4	5,206	272.3	7,139	373.5
Mohave	10	12.9	52	67.2	95	74.4
Navajo	72	97.3	349	471.8	618	835.4
Pima	80	12.4	1,222	190.0	1,586	246.7
Pinal	21	20.2	163	157.0	222	213.9
Santa Cruz	9	32.7	14	50.8	23	83.5
Yavapai	13	14.2	42	45.8	92	100.3
Yuma	29	33.0	135	153.5	224	254.7
TOTAL STATE	697	20.8	8,030	239.6	11,352	338.7

1 Those sexually transmitted diseases which are reported.
2 Rates per 100,000 population.
3 Rates only calculated by county since out-of-state resident cases could be removed from county frequencies but not age or gender frequencies. Out-of-state cases comprise 2.2 percent of the cases in age and gender distributions.
4 A county is listed only if at least a total of 20 STD cases occurred.

TABLE 5-3A

PEOPLE REPORTED WITH AIDS AND WHO LATER DIED FROM AIDS BY YEAR OF DIAGNOSIS, ARIZONA, 1981-DECEMBER 31, 1986

Year of Diagnosis	# People	Cumulative	# Who Died	Cumulative
1981	1	1	1	1
1982	3	4	3	4
1983	8	12	7	11
1984	20	32	19	30
1985	68	100	58	88
1986	122	222	41	129

TABLE 5-3B

RISK ACTIVITIES ENGAGED IN BY PEOPLE WITH AIDS, ARC,[1] AND HIV[2] ANTIBODY POSITIVE TESTS BY GENDER, MARICOPA COUNTY, 1981-OCTOBER 30, 1987

Risk Activity	AIDS		ARC		HIV+ Test[3]	
	M[4]	F	M	F	M	F
Unsafe Gay/Bisexual Practices	179	0	82	0	134	0
Unsafe IV Drug Use[5]	31	0	28	4	47	8
Receiving Blood Transfusion						
o due to hemophilia	8	0	8	0	11	0
o not due to hemophilia	7	4	1	2	6	7
Unsafe Heterosexual Practices	4	4	2	2	6	7
Other[6]	6	0	6	0	9	1
Total	235	8	127	8	213	19

---

1 ARC is AIDS-Related Complex.

2 HIV is human immunodeficiency virus, the agent considered to cause AIDS or ARC.

3 The risk activity(ies) was not known for 36 males and three females; most could not be located for an interview when attempts were made.

4 M = male; F = female

5 Unsafe intravenous (IV) drug use was engaged in by persons with either a heterosexual or gay/bisexual orientation.

6 One person was a male infant with a positive HIV antibody test who was infected congenitally. For all the other people in this category the responsible risk activity was unknown after an interview.

SUMMARY OF STATUS: PROGRESS AND PROBLEMS

As 1990 approaches, progress toward attaining the U.S. Public Health Services objectives for health assumes heightened prominence. Two questions are central to this summary. What progress has been made to date in improving the health status of Arizona residents? What problems appear evident in health status? When data are available, progress is indexed in terms of attainment of an objective and problems are stated in terms of distance from accomplishing an objective. Results relevant to progress or problems are outlined below for four major areas: 1) Mothers and Infants; 2) Total Mortality and Chronic Diseases; 3) Sudden and/or Violent Death; and 4) Infectious Diseases. The results given in each area are not listed in any priority order.

MOTHERS AND INFANTS

PROGRESS

1. The infant mortality rate in Arizona is ten percent lower than the national rate.

2. The Arizona neonatal mortality rate decreased 27 percent between 1981 and 1986 and is now one-fifth lower than the U.S. rate.

3. The Arizona neonatal mortality rate of 5.4 deaths per 1,000 live births in 1986 is 17 percent better than the 1990 objective of 6.5.

PROBLEMS

1. The Arizona infant mortality rate has not declined since 1982 and remains four percent higher than the 1990 objective.

2. The proportional contribution of postneonatal deaths to infant mortality increased 18 percent between 1981 and 1986 and is now higher than in 1950.

3. Infant mortality due to low birthweight/short gestation increased 60 percent between 1982 and 1986.

4. The proportion of low birthweight babies in 1986 was still higher than the 1980 proportion and 24 percent greater than the 1990 objective.

5. Girls under 15 years of age in Arizona recorded their highest birth rate of the past six years in 1986.

6. Birth rates of adolescent girls in Arizona increased in the past six years, moving further away from the 1990 objective.

7. Adolescent girls in Arizona in 1986 were now 30 percent more likely to have an unintended birth than their national peers compared to a 24 percent greater likelihood in 1980.

TOTAL MORTALITY AND CHRONIC DISEASES

PROGRESS

1. Arizona men died in 1986 at a rate lower than their national peers and also lower than their 1981 rate.

2. The declining trend in mortality from heart disease and stroke continued, although the latter declined one-third more nationally.

3. The alcoholism and atherosclerosis death rates in 1986 were at their lowest levels of the past six years.

4. No adolescent female died from heart disease in 1986.

5. The cancer death rate for middle-aged women declined for the first time in the past six years in 1986.

6. Among the leading causes of elderly death, heart disease has improved the most in this decade.

PROBLEMS

1. Arizona women, unlike their national counterparts, experienced no decline in mortality between 1981 and 1986 and so died at a higher rate than their U.S. peers.

2. The 1986 cancer mortality rate was the highest rate of the past six years.

3. Arizona residents in 1986 as in 1981 were at least 41 percent more likely to die from COPD than their national peers.

4. The Arizona mortality rate for COPD was greater in 1986 than 1981.

5. Arizona's pneumonia/influenza death rate increased twice as much as the nation's between 1981 and 1986.

6. Arizonans in 1986 were 22 percent more likely to succumb to pneumonia/influenza than their national counterparts.

7. The Arizona atherosclerosis death rate was 47 percent higher than the U.S. rate in 1986 rather than ten percent higher as in 1981.

8. Eight of the 15 counties exceeded the U.S. total mortality rate in 1986.

9. The 1986 mortality rate for Arizona's children less than 15 years of age was elevated 27 percent above the U.S. rate and was 20 percent greater than the 1990 objective.

10. The mortality rate for adolescents between 15 and 19 years of age was the highest rate in this decade and 20 percent greater than the 1990 objective for 15 to 24 year olds.

11. The 1986 mortality rate for young adults (20 to 44 years old) was the highest of the decade.

12. The cancer death rate for urban children in 1986 was the highest of this decade.

13. Middle-aged men died from cancer at the highest rate of the decade in 1986.

14. The rate of cancer deaths among rural elderly surpassed their urban counterparts for the first time in this decade in 1986.

SUDDEN AND/OR VIOLENT DEATH

PROGRESS

1. The 1986 motor vehicle death rate in Arizona was 11 percent lower than the 1981 rate.

2. Homicide has claimed the lives of Arizona's children at declining rates since 1984.

3. Suicide deaths among teenage girls dropped in 1986 to the lowest rate of the past six years.

4. Middle-aged females died in accidents in 1986 at the lowest rate of this decade.

5. The consecutive three-year increase in motor vehicle death rates for young adults halted in 1986.

6. The 1986 homicide death rate of Arizona adolescent boys was three percent lower than the national rate.

PROBLEMS

1. Arizona's 1986 vehicular death rate exceeded the U.S. rate by 41 percent and was 55 percent greater than the 1990 objective.

2. Arizonans committed suicide in 1986 at the highest rate of the last six years, exceeding their 1981 rate by ten percent and the 1986 national rate by 48 percent.

3. All counties in Arizona had higher death rates from motor vehicle accidents and suicide than the respective U.S. rates.

4. Motor vehicle accidents killed Arizona children at a rate higher in 1986 than 1981 and 93 percent greater than the 1990 objective.

5. In 1986, suicide became the sixth leading cause of death among boys less than 15 years old for the first time in this or any earlier decade.

6. Adolescent boys killed themselves at record-high rates of the decade in 1985 and 1986, with the rate 27 percent greater than the 1990 objective for the larger age group of 15 to 24 year olds.

7. The homicide mortality rate for adolescents in Arizona was twice as great in 1986 as in 1981.

8. Motor vehicle accidents killed Arizona adolescents in 1986 at a rate higher than the 1970 rate and 44 percent greater than the 1990 objective.

9. Young adult males were murdered in 1986 at the highest rate of this decade.

INFECTIOUS DISEASES

PROGRESS

1. The 1986 incidence of tuberculosis dropped to the lowest rate of this decade and was lower than the 1990 objective.

2. The 1986 incidence rate of gonorrhea in Arizona was 35 percent lower than the national rate and 14 percent lower than the 1990 objective.

3. The incidence of valley fever was 50 percent lower in 1986 than 1981.

4. No Arizona residents have contracted rabies for the past five years.

5. Fewer cases of sexually transmitted diseases were recorded among persons at least 20 years of age in 1986.

6. The annual incidence rates of both syphilis and gonorrhea declined in Apache, Maricopa and Pima Counties in 1986.

PROBLEMS

1. The incidence rate of Hepatitis B in 1986 was the highest of the decade and 35 percent greater than the 1990 objective.

2. More than a fivefold increase occurred in the number of reported cases of bacterial meningitis in 1986 relative to 1985, resulting in an incidence rate 2.5 times greater than the 1990 objective.

3. Cases of measles, mumps and pertussis were reported at the highest level of the past six years in 1986.

4. A ninefold increase in the number of reported cases of measles, mumps and pertussis occurred between 1981 and 1986.

5. The enteric diseases of amebiasis and campylobacteriosis exacted their highest sickness toll of the last six years in 1986.

6. The overall number of cases of all forms of hepatitis was 2.2 times greater in 1986 than 1981.

7. More cases of reported sexually transmitted diseases occurred among persons 19 years of age or younger.

8. The number of people in Arizona diagnosed and reported with Acquired Immune Deficiency Syndrome (AIDS) during the five year period between 1981 and 1985 was less than the number reported in 1986 alone.

9. The cumulative total of reported cases of AIDS in the state since the first case report in 1981 to the end of 1986 was 222.

10. Among the cases of AIDS reported in 1986, one was a child.

11. Among people who were voluntarily tested in Maricopa County for HIV antibody and were positive, 41 percent were 20 to 29 years old.

12. Unsafe intravenous drug use was a high risk activity implicated in 13 percent of the male AIDS cases, 22 percent of male ARC cases, and 22 percent of the male HIV antibody positive tests in Maricopa County.

PART II: VITAL STATISTICS

POPULATION STATISTICS

TABLE 6-1

ESTIMATED POPULATION BY COUNTY OF RESIDENCE,
ARIZONA, 1980 - 1986

COUNTY	1980	1981	1982	1983	1984	1985	1986
ARIZONA	2,728,163	2,816,007	2,895,791	2,975,627	3,080,284	3,197,804	3,351,880
Apache	52,108	52,249	53,412	54,366	55,482	56,357	60,499
Cochise	85,686	88,280	89,690	90,745	93,358	96,293	97,603
Coconino	75,008	76,554	78,498	80,165	83,388	85,973	88,951
Gila	37,080	38,373	39,037	39,230	38,502	38,104	39,700
Graham	22,862	23,494	23,852	23,925	23,237	23,330	24,533
Greenlee	11,406	11,792	11,809	11,042	9,999	8,683	9,576
La Paz	12,557	13,003	13,181	13,628	14,066	14,391	14,100
Maricopa	1,519,000	1,562,550	1,614,584	1,663,748	1,731,141	1,800,033	1,911,612
Mohave	55,865	59,427	61,588	63,996	68,653	72,593	77,371
Navajo	67,629	69,027	69,567	69,842	71,242	72,324	73,973
Pima	531,443	553,478	565,143	582,078	603,330	624,347	642,991
Pinal	90,918	94,141	97,058	98,491	99,751	100,150	103,795
Santa Cruz	20,459	21,120	21,920	22,271	21,730	27,111	27,547
Yavapai	68,145	72,649	75,489	78,398	78,622	88,000	91,697
Yuma	77,997	79,870	80,964	83,703	87,783	90,116	87,932

Source: Arizona Department of Economic Security, Population Statistics Unit

TABLE 6-2

ESTIMATED POPULATION BY AGE AND GENDER, AND COUNTY OF RESIDENCE, ARIZONA, 1986

COUNTY		All ages	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+
ARIZONA	T	3,351,678	304,337	499,610	519,970	603,961	439,521	295,924	283,687	402,864
	M	1,651,370	155,640	253,394	260,172	306,687	221,295	146,567	134,229	173,385
	F	1,700,308	148,697	246,216	259,798	299,274	218,226	149,357	149,458	229,479
Apache	T	60,488	9,746	13,662	11,156	8,549	6,287	4,313	3,167	3,602
	M	29,637	4,987	6,925	5,621	3,931	3,025	2,063	1,467	1,616
	F	30,851	4,759	6,737	5,535	4,618	3,262	2,252	1,700	1,986
Cochise	T	97,594	8,148	15,623	16,497	15,660	12,283	9,218	8,647	11,514
	M	48,369	4,168	7,924	8,308	8,012	6,089	4,541	4,108	5,216
	F	49,225	3,980	7,699	8,189	7,648	6,194	4,677	4,539	6,298
Coconino	T	88,938	9,517	15,222	14,910	21,326	11,281	6,859	5,182	4,638
	M	44,336	4,868	7,766	7,250	10,633	5,794	3,437	2,483	2,103
	F	44,602	4,649	7,456	7,660	10,693	5,487	3,422	2,699	2,535
Gila	T	39,687	3,478	6,591	5,858	5,296	4,749	3,586	4,020	6,106
	M	19,250	1,774	3,269	2,873	2,547	2,355	1,776	1,872	2,783
	F	20,437	1,704	3,322	2,985	2,749	2,394	1,810	2,148	3,323
Graham	T	24,524	2,168	4,657	3,992	3,872	2,967	2,175	1,919	2,771
	M	12,394	1,103	2,333	1,882	2,133	1,663	1,085	935	1,259
	F	12,130	1,065	2,324	2,110	1,739	1,304	1,090	984	1,512
Greenlee	T	9,566	857	2,043	1,502	1,406	1,214	834	937	768
	M	4,650	439	1,010	739	674	611	386	453	336
	F	4,916	418	1,033	763	732	603	448	484	432
La Paz	T	14,090	1,206	2,309	1,937	1,974	1,537	1,229	1,410	2,484
	M	7,025	616	1,191	954	975	754	604	707	1,221
	F	7,065	590	1,118	983	999	783	625	703	1,263
Maricopa	T	1,911,607	173,285	275,514	296,576	350,782	258,587	171,193	158,956	226,711
	M	945,331	88,638	140,813	150,185	178,779	130,644	85,388	75,360	95,523
	F	966,276	84,647	134,701	146,391	172,003	127,943	85,805	83,596	131,188
Mohave	T	77,360	5,707	10,625	11,517	11,407	8,914	6,895	8,764	13,527
	M	38,379	2,922	5,471	5,729	5,630	4,427	3,419	4,173	6,606
	F	38,981	2,785	5,154	5,788	5,777	4,487	3,476	4,591	6,921
Navajo	T	73,960	9,451	16,157	13,689	10,309	8,696	6,177	4,448	5,029
	M	31,732	4,829	6,794	5,470	4,096	3,645	2,643	2,023	2,230
	F	42,228	4,622	9,363	8,219	6,213	5,051	3,534	2,425	2,799
Pima	T	642,985	52,108	87,873	97,031	127,351	86,201	56,534	56,496	79,386
	M	315,077	26,636	44,792	48,486	64,058	43,737	27,882	26,398	33,086
	F	327,908	25,472	43,081	48,545	63,293	42,464	28,652	30,098	46,300
Pinal	T	103,782	10,067	17,426	16,590	16,214	12,336	9,053	9,181	12,913
	M	52,636	5,151	8,889	8,482	8,578	6,503	4,561	4,455	6,016
	F	51,146	4,916	8,537	8,108	7,636	5,833	4,492	4,726	6,897
Santa Cruz	T	27,535	3,033	5,270	4,710	3,839	3,293	2,462	2,272	2,654
	M	13,210	1,553	2,671	2,367	1,774	1,580	1,140	993	1,131
	F	14,325	1,480	2,599	2,343	2,067	1,713	1,322	1,279	1,523
Yavapai	T	91,687	6,347	12,022	11,775	13,076	10,668	8,169	10,432	19,195
	M	44,939	3,247	6,139	5,883	6,656	5,312	4,026	4,878	8,796
	F	46,748	3,100	5,883	5,892	6,420	5,356	4,143	5,554	10,399
Yuma	T	87,919	9,207	14,590	12,173	14,888	10,476	7,197	7,832	11,553
	M	44,329	4,704	7,393	5,916	8,205	5,140	3,602	3,911	5,457
	F	43,590	4,503	7,197	6,257	6,683	5,336	3,595	3,921	6,096

Source: Based on estimates prepared by the Arizona Department of Economic Security, Population Statistics Unit, 12/12/86.

BIRTH STATISTICS

TABLE 7-1

RATES OF NATURAL INCREASE FROM BIRTHS PER 1,000 POPULATION,
BY COUNTY OF RESIDENCE,
ARIZONA, AND UNITED STATES, 1981-1986

AREA	1981	1982	1983	1984	1985	1986	Percent Change 1985-1986
Apache	26.2	27.4	26.2	29.0	27.1	23.5	-13.3
Cochise	11.4	10.1	9.4	10.4	9.1	8.8	-3.3
Coconino	17.8	17.1	18.3	17.9	18.2	16.2	-11.0
Gila	11.3	10.3	7.6	7.2	6.8	5.7	-16.2
Graham	14.0	12.7	10.4	11.3	10.2	8.4	-17.6
Greenlee	20.4	13.9	10.3	11.3	13.1	5.8	-55.7
Maricopa	10.2	10.2	10.0	10.0	11.2	11.1	-0.9
Mohave	5.9	4.8	5.6	5.9	2.9	3.5	+20.7
Navajo	20.2	21.0	20.9	20.3	19.8	19.1	-3.5
Pima	8.9	8.6	8.8	8.1	8.7	8.3	-4.6
Pinal	12.3	12.7	11.2	10.5	12.7	10.7	-15.8
Santa Cruz	18.6	16.2	14.4	16.1	13.8	13.0	-5.8
Yavapai	2.6	2.6	0.9	0.4	0.4	1.1	+175.0
Yuma	13.8	12.2	13.0	13.5	13.8	14.8	+7.2
La Paz	NA	NA	6.5	3.0	6.9	6.2	-10.1
ARIZONA	10.8	10.6	10.3	10.1	10.9	10.6	-2.8
U.S.	7.3	7.5	6.9	7.0	7.0	6.8	-2.9

TABLE 7-2
BIRTHS BY COUNTY OF RESIDENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	20,510	36,655	37,591	39,543	50,049	51 620	52,628	52,919	55,109	59,344	60,822
Apache	761	1,479	1,369	1,434	1,627	1,681	1,845	1,787	1,817	1,853	1,757
Cochise	765	1,651	1.352	1,505	1,570	1,646	1,555	1,565	1,618	1,559	1,524
Coconino	768	1,452	1,407	1,477	1,824	1,733	1,768	1,808	1,813	1,946	1,828
Gila	717	744	693	666	705	760	810	683	672	642	625
Graham	385	334	371	424	512	509	468	435	446	406	395
Greenlee	440	255	232	297	272	299	256	185	195	161	106
La Paz	NA	NA	NA	NA	NA	NA	NA	236	195	234	215
Maricopa	8,805	17,789	19,695	19,987	26,769	27,800	28,598	28,758	30,711	33,780	35,334
Mohave	230	184	465	545	871	886	886	926	988	968	1,065
Navajo	895	1,443	1,484	1,631	1,899	1,816	1,883	1,911	1,864	1,895	1,896
Pima	3,862	7,131	6,735	7,264	8,931	9,130	9,155	9,585	9,678	10,278	10,423
Pinal	1,407	1,943	1,555	1,712	1,840	1,899	1,945	1,869	1,849	2,049	2,053
Santa Cruz	250	345	297	361	499	519	491	457	512	523	504
Yavapai	492	630	543	631	937	998	1,067	1,032	999	1,088	1,129
Yuma	733	1,275	1,393	1,609	1,793	1,944	1,901	1,682	1,752	1,962	1,968

TABLE 7-3

BIRTHS BY COUNTY OF OCCURRENCE,
ARIZONA, 1950 - 1986

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	20,728	36,499	37,455	39,436	50,068	51,604	52,368	52,544	54,889	59,305	60,775
Apache	906	1,539	1,245	1,066	1,237	1,228	1,318	1,259	1,419	1,663	1,641
Cochise	790	1,573	1,382	1,477	1,511	1,618	1,500	1,453	1,513	1,474	1,420
Coconino	633	1,440	1,360	1,689	2,263	2,114	2,239	2,207	2,188	2,264	2,163
Gila	659	684	687	569	576	613	668	560	570	538	510
Graham	400	297	315	384	397	407	376	360	374	412	400
Greenlee	402	249	240	291	309	306	256	173	178	89	8
La Paz	NA	NA	NA	NA	NA	NA	NA	3	4	2	5
Maricopa	8,934	18,016	20,015	20,722	28,076	29,194	30,038	30,314	32,191	35,410	36,902
Mohave	242	145	289	489	861	876	834	858	909	975	1,029
Navajo	891	1,163	1,229	1,157	1,183	1,107	1,158	1,243	1,210	1,155	1,080
Pima	3,902	7,174	6,923	7,838	9,906	10,208	10,111	10,307	10,415	11,036	11,161
Pinal	1,464	1,944	1,396	1,175	920	905	902	850	873	973	1,025
Santa Cruz	271	442	327	358	310	316	253	282	344	326	361
Yavapai	510	628	538	581	846	926	1,002	952	925	1,009	1,051
Yuma	724	1,205	1,509	1,640	1,673	1,786	1,713	1,723	1,776	1,979	2,019

TABLE 7-4
RESIDENT BIRTHS BY MONTH OF OCCURRENCE
Arizona, 1975-86

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1975	3,324	3,008	3,255	3,149	3,147	3,073	3,446	3,507	3,574	3,471	3,128	3,461	39,543
Percent	8.4	7.6	8.2	8.0	8.0	7.8	8.7	8.9	9.0	8.8	7.9	8.8	100.0
1976	3,346	3,071	3,297	3,063	3,206	3,137	3,426	3,569	3,669	3,382	3,328	3,534	40,028
Percent	8.4	7.7	8.2	7.7	8.0	7.8	8.6	8.9	9.2	8.4	8.3	8.8	100.0
1977	3,456	3,233	3,547	3,277	3,398	3,314	3,492	3,802	3,667	3,605	3,450	3,586	41,827
Percent	8.3	7.7	8.5	7.8	8.1	7.9	8.3	9.1	8.8	8.6	8.2	8.6	100.0
1978	3,563	3,251	3,506	3,173	3,414	3,309	3,695	3,999	3,878	3,789	3,721	3,760	43,058
Percent	8.3	7.6	8.1	7.4	7.9	7.7	8.6	9.3	9.0	8.8	8.6	8.7	100.0
1979	3,693	3,381	3,829	3,485	3,632	3,678	4,036	4,288	4,179	4,086	4,088	4,174	46,549
Percent	7.9	7.3	8.2	7.5	7.8	7.9	8.7	9.2	9.0	8.8	8.8	9.0	100.0
1980	4,006	3,748	4,069	3,822	4,039	3,982	4,497	4,369	4,707	4,414	4,060	4,336	50,049
Percent	8.0	7.5	8.1	7.6	8.1	8.0	9.0	8.7	9.4	8.8	8.1	8.7	100.0
1981	4,139	3,868	4,311	3,934	3,990	4,325	4,533	4,662	4,537	4,647	4,264	4,410	51,620
Percent	8.0	7.5	8.4	7.6	7.7	8.4	8.8	9.0	8.8	9.0	8.3	8.5	100.0
1982	4,252	3,925	4,355	4,160	4,107	4,280	4,608	4,691	4,798	4,634	4,300	4,518	52,628
Percent	8.1	7.5	8.3	7.9	7.8	8.8	8.8	8.9	9.1	8.8	8.2	8.6	100.0
1983	4,420	4,016	4,532	4,291	4,181	4,195	4,585	4,866	4,721	4,529	4,230	4,393	52,919
Percent	8.4	7.6	8.6	8.1	7.9	7.9	8.6	9.2	8.9	8.6	8.0	8.3	100.0
1984	4,397	4,209	4,456	4,244	4,331	4,368	4,954	4,979	5,013	4,842	4,693	4,623	55,109
Percent	8.0	7.6	8.1	7.7	7.9	7.9	9.0	9.0	9.1	8.8	8.6	8.3	100.0
1985	4,841	4,435	4,814	4,460	4,820	4,693	5,231	5,476	5,228	5,196	4,998	5,156	59,344
Percent	8.2	7.5	8.1	7.5	8.1	7.9	8.8	9.2	8.8	8.8	8.4	8.7	100.0
1986	4,915	4,572	4,847	4,696	4,799	4,935	5,452	5,489	5,552	5,367	4,800	5,298	60,822
Percent	8.1	7.5	8.1	7.7	7.9	8.1	9.0	9.0	9.1	8.8	7.9	8.7	100.0

TABLE 7-5
BIRTHS TO ARIZONA RESIDENTS OCCURRING IN ARIZONA
BY COUNTY AND MONTH, ARIZONA 1986

County of Occurrence	TOTAL	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ARIZONA	59,942*	4,844	4,500	4,882	4,621	4,729	4,859	5,359	5,407	5,483	5,275	2,823	3,152
Apache	1,416	109	108	100	120	113	116	134	135	127	122	98	134
Cochise	1,516	109	110	107	124	106	148	137	131	139	144	137	124
Coconino	1,777	155	147	135	137	123	138	157	154	165	149	168	149
Gila	624	51	36	44	40	45	57	58	63	60	59	50	61
Graham	394	40	24	32	35	39	24	39	44	26	28	30	33
Greenlee	105	13	6	8	13	11	8	7	6	5	8	11	9
La Paz	143	10	17	10	7	15	18	11	12	15	6	13	9
Maricopa	35,257	2,866	2,620	2,886	2,677	2,818	2,802	3,167	3,183	3,162	3,101	2,823	3,152
Mohave	897	68	73	84	73	61	77	70	71	76	90	67	87
Navajo	1,785	158	123	127	149	143	183	172	163	165	131	132	139
Pima	10,399	810	798	899	840	817	831	887	939	972	961	786	859
Pinal	2,048	154	145	158	138	168	165	199	190	216	174	164	177
Santa Cruz	501	31	43	56	43	35	47	45	40	52	33	39	37
Yavapai	1,126	91	87	79	91	82	104	104	97	107	108	80	96
Yuma	1,954	179	163	157	134	153	141	172	179	196	161	145	174

* 880 births to Arizona residents occurred out-of-state.

TABLE 7-6

BIRTHS BY MOTHER'S AGE GROUP AND COUNTY OF RESIDENCE
ARIZONA, 1986

County of Residence	All Ages	Less Than 15	15/19	20/24	25/29	30/34	35/39	40/44	45 and Over	Not Stated
ARIZONA	60,822	152	8,224	19,505	18,562	10,505	3,357	497	17	3
Apache	1,757	10	268	586	453	294	119	25	1	1
Cochise	1,524	-	199	540	459	229	82	14	1	-
Coconino	1,828	4	267	585	514	328	111	18	1	-
Gila	625	4	114	222	156	100	26	3	-	-
Graham	395	3	75	139	86	63	22	7	-	-
Greenlee	106	-	19	30	28	26	2	1	-	-
La Paz	215	-	39	82	60	22	9	2	1	-
Maricopa	35,334	86	4,632	11,168	11,198	6,106	1,889	247	7	1
Mohave	1,065	2	163	398	287	155	47	13	-	-
Navajo	1,896	10	290	638	475	309	138	34	1	1
Pima	10,423	18	1,274	3,166	3,247	2,007	624	83	4	-
Pinal	2,053	9	392	747	530	263	97	14	1	-
Santa Cruz	504	-	63	147	142	98	44	10	-	-
Yavapai	1,129	2	146	360	329	205	77	10	-	-
Yuma	1,968	4	283	697	598	300	70	16	-	-

TABLE 7-7

RESIDENT BIRTHS BY MOTHER'S RACE AND AGE GROUP
ARIZONA, 1983-86

Year	Ethnic Group	Total	-15	15/19	20/24	25/29	30/34	35/39	40/44	45+	Not Stated
1983	White	45,141	75	6,149	15,330	13,905	7,179	2,158	326	17	2
	Native American	5,297	33	1,047	1,907	1,281	688	271	67	2	1
	Black	1,820	15	458	660	452	178	45	10	2	-
	Asian	661	-	32	149	242	179	52	6	1	-
	Total	52,919	123	7,686	18,046	15,880	8,224	2,526	409	22	3
1984	White	47,250	67	6,028	16,005	14,599	7,889	2,312	335	15	-
	Native American	5,265	27	1,014	1,871	1,263	734	282	68	5	1
	Black	1,911	16	432	743	466	191	58	5	-	-
	Asian	683	-	39	153	254	166	59	12	-	-
	Total	55,109	110	7,513	18,772	16,582	8,980	2,711	420	20	1
1985	White	51,034	67	6,486	16,874	15,834	8,743	2,624	391	12	3
	Native American	5,478	25	980	1,916	1,321	805	349	78	3	1
	Black	1,969	15	417	753	488	203	86	7	-	-
	Asian	863	3	33	178	336	239	67	7	-	-
	Total	59,344	110	7,916	19,721	17,979	9,990	3,126	483	15	4
1986	White	52,088	98	6,666	16,536	16,331	9,172	2,854	414	15	2
	Native American	5,718	42	1,044	2,012	1,369	839	344	65	2	1
	Black	2,157	12	469	777	541	268	83	7	-	-
	Asian	859	-	45	180	321	226	76	10	-	-
	Total	60,822	152	8,224	19,505	18,562	10,505	3,357	497	17	3

TABLE 7-8

RESIDENT LIVE BIRTHS BY MOTHER'S ETHNICITY AND AGE GROUP, ARIZONA, 1986

Age	All Ethnic Groups	White[a]	Non-White[b]	Hispanic All Races	Non Hispanic All Races	WHITE			BLACK			NATIVE AMERICAN			OTHER		
						All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic
< 15	152	98	54	65	87	98	61	37	12	0	12	42	4	38	0	0	0
15-19	8,224	6,666	1,558	2,844	5,380	6,666	2,756	3,910	469	10	459	1,044	72	972	45	6	39
20-24	19,505	16,536	2,969	5,048	14,457	16,536	4,930	11,606	777	8	769	2,012	89	1,923	180	21	159
25-29	18,562	16,331	2,231	3,768	14,794	16,331	3,692	12,639	541	5	536	1,369	53	1,316	321	18	303
30-34	10,505	9,172	1,333	1,907	8,598	9,172	1,865	7,307	268	2	266	869	24	815	226	16	210
35-39	3,357	2,854	503	678	2,679	2,854	664	2,190	83	2	81	344	7	337	76	5	71
40-44	497	414	83	119	378	414	117	297	7	0	7	65	1	64	11	1	10
45+	17	15	2	7	10	15	7	8	0	0	0	2	0	2	0	0	0
Unknown	3	2	1	1	2	2	1	1	0	0	0	1	0	1	0	0	0
TOTAL	60,822	52,088	8,734	14,437	46,385	52,088	14,093	37,995	2,157	27	2,130	5,718	250	5,468	859	67	792

[a] Includes Whites of Hispanic origin

[b] Includes Non-Whites of Hispanic origin

Note: In previous years, Hispanics as an ethnic category have been restricted to White Hispanics

TABLE 7-9

BIRTHS BY MOTHER'S COUNTY OF RESIDENCE AND EDUCATION
ARIZONA, 1986

County of Residence	Total	YEARS OF EDUCATION None	1-8	9-12	13-16	17+	Not Stated
ARIZONA	60,822	132	4,200	35,068	18,228	2,575	619
Percent	100.0	0.2	6.9	57.7	30.0	4.2	1.0
Apache	1,757	5	129	1,179	381	29	34
Cochise	1,524	1	95	933	438	35	22
Coconino	1,828	10	81	1,119	537	74	7
Gila	625	-	22	473	117	11	2
Graham	395	1	13	277	96	7	1
Greenlee	106	-	6	66	33	1	-
La Paz	215	-	14	100	26	-	75
Maricopa	35,334	74	2,254	19,300	11,475	1,564	367
Mohave	1,065	-	40	758	209	26	32
Navajo	1,896	17	115	1,302	397	34	31
Pima	10,423	19	518	5,959	3,259	648	20
Pinal	2,053	2	192	1,403	413	31	12
Santa Cruz	504	-	56	347	84	15	2
Yavapai	1,129	2	46	679	349	51	2
Yuma	1,968	1	319	4,173	414	49	12

TABLE 7-10

BIRTHS BY COUNTY OF RESIDENCE OF MOTHER, RACE AND SEX OF CHILD
ARIZONA, 1986

County of Residence	Total Births			White			Non-White			Black			Native American			Asian		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
ARIZONA	60,822	31,049	29,773	51,611	26,396	25,215	9,211	4,653	4,558	2,730	1,424	1,306	5,652	2,802	2,850	829	427	402
Apache	1,757	898	859	282	149	133	1,475	749	726	4	2	2	1,470	746	724	1	1	0
Cochise	1,524	783	741	1,309	674	635	215	109	106	150	71	79	6	5	1	59	33	26
Coconino	1,828	916	912	983	501	482	843	415	430	40	25	15	799	388	411	6	2	4
Gila	625	331	294	424	219	205	201	112	89	4	1	3	192	109	83	5	2	3
Graham	395	225	170	321	182	139	74	43	31	6	5	1	67	37	30	1	1	0
Greenlee	106	57	49	106	57	49	0	0	0	0	0	0	0	0	0	0	0	0
La Paz	215	108	107	153	76	77	62	32	30	5	1	4	54	29	25	3	2	1
Maricopa	35,334	18,044	17,290	32,034	16,360	15,674	3,295	1,679	1,616	1,796	930	866	973	483	490	526	266	260
Mohave	1,065	540	525	1,015	511	504	50	29	21	3	2	1	43	25	18	4	2	2
Navajo	1,896	916	980	629	312	317	1,267	604	663	20	12	8	1,240	590	650	7	2	5
Pima	10,423	5,352	5,071	9,274	4,761	4,513	1,149	591	558	525	284	241	456	221	235	168	86	82
Pinal	2,053	1,024	1,029	1,655	832	823	398	192	206	93	50	43	299	139	160	6	3	3
Santa Cruz	504	268	236	502	267	235	2	1	1	2	1	1	0	0	0	0	0	0
Yavapai	1,129	592	537	1,093	570	523	36	22	14	5	3	2	28	17	11	3	2	1
Yuma	1,968	995	973	1,831	925	906	137	70	67	77	37	40	25	13	12	35	20	15

TABLE 7-11

HISPANIC* BIRTHS BY COUNTY OF RESIDENCE OF MOTHER, RACE AND SEX OF CHILD
ARIZONA, 1986

County of Residence	Total Births			White			Non-White			Black			Native American			Asian		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
ARIZONA	17,208	8,640	8,568	16,232	8,175	8,057	976	465	511	247	121	126	648	299	349	81	45	36
Apache	71	41	30	56	35	21	976	6	9	1	0	1	14	6	8	0	0	0
Cochise	560	289	271	547	282	265	13	7	6	8	4	4	2	1	1	3	2	1
Coconino	234	113	121	204	99	105	30	14	16	6	3	3	23	11	12	1	0	1
Gila	152	71	81	144	68	76	8	3	5	0	0	0	6	3	3	2	0	2
Graham	134	75	59	130	73	57	4	2	2	1	1	0	3	1	2	0	0	0
Greenlee	59	33	26	59	33	26	0	0	0	0	0	0	0	0	0	0	0	0
La Paz	68	35	33	53	27	26	15	8	7	0	0	0	15	8	7	0	0	0
Maricopa	9,240	4,592	4,648	8,766	4,377	4,389	473	214	259	117	51	66	318	143	175	39	20	18
Mohave	98	59	39	89	55	34	9	4	5	3	2	1	6	2	4	0	0	0
Navajo	133	70	63	101	57	44	32	13	19	5	2	3	27	11	16	0	0	0
Pima	3,982	1,983	1,999	3,726	1,861	1,865	256	122	134	86	47	39	145	60	85	25	15	10
Pinal	834	425	409	746	375	371	88	50	38	10	5	5	76	43	33	2	2	0
Santa Cruz	456	248	208	454	247	207	2	1	1	2	1	1	0	0	0	0	0	0
Yavapai	149	79	70	146	77	69	3	2	1	0	0	0	3	2	1	0	0	0
Yuma	1,038	527	511	1,011	509	502	27	18	9	8	5	3	10	8	2	9	5	4

* Either one or both parents are of Hispanic-origin

TABLE 7-12

LOW-BIRTHWEIGHT BIRTHS BY COUNTY OF RESIDENCE
ARIZONA, 1970-1986

County of Residence	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	2,773	2,563	3,089	3,103	3,076	3,204	3,377	3,712	3,785
Apache	102	93	98	109	117	111	109	137	129
Cochise	113	131	114	122	111	141	125	104	87
Coconino	125	102	112	112	96	120	113	132	113
Gila	37	46	38	34	54	31	41	36	50
Graham	38	29	28	43	22	20	13	29	29
Greenlee	17	17	14	15	11	10	10	7	4
La Paz	NA	NA	NA	NA	NA	25	10	16	18
Maricopa	1,446	1,293	1,628	1,664	1,655	1,695	1,927	2,095	2,232
Mohave	26	40	58	47	72	52	66	52	73
Navajo	121	123	118	121	95	102	107	109	111
Pima	487	433	559	549	511	592	562	650	607
Pinal	109	116	124	120	141	114	103	137	138
Santa Cruz	19	18	33	21	32	24	16	46	35
Yavapai	31	33	57	50	66	73	72	69	62
Yuma	102	89	108	96	93	94	103	93	97

TABLE 7-13

LOW-BIRTHWEIGHT BIRTHS BY MOTHER'S AGE GROUP AND COUNTY OF RESIDENCE
ARIZONA, 1986

County of Residence	Total Births All Weights	Total Low-Birthweight Births	Under 15	15/19	20/24	25/29	30/34	35/39	40/44	45 and Over
ARIZONA	60,822	3,785	15	633	1,183	1,032	652	229	37	4
Apache	1,757	129	-	20	37	33	28	5	5	1
Cochise	1,524	87	-	12	33	22	14	5	1	-
Coconino	1,828	113	-	28	40	23	17	4	1	-
Gila	625	50	-	14	16	11	8	1	-	-
Graham	395	29	-	3	9	10	3	1	3	-
Greenlee	106	4	-	1	-	3	-	-	-	-
La Paz	215									
Maricopa	35,334	2,232	11	355	688	654	358	150	15	1
Mohave	1,065	73	-	14	26	13	15	2	3	-
Navajo	1,896	111	-	15	28	33	27	7	1	-
Pima	10,423	607	2	104	190	153	122	32	3	1
Pinal	2,053	138	2	28	49	28	21	8	1	1
Santa Cruz	504	35	-	6	9	3	9	6	2	-
Yavapai	1,129	62	-	10	14	19	14	4	1	-
Yuma	1,968	97	-	21	37	23	12	3	1	-

TABLE 7-14

LOW-BIRTHWEIGHT BIRTHS BY MOTHER'S ETHNICITY AND AGE GROUP,
ARIZONA, 1986

Age	All Ethnic Groups	White[a]	Non-White[b]	Hispanic All Races	Non Hispanic All Races	WHITE			BLACK			NATIVE AMERICAN			OTHER		
						All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic
< 15	15	10	5	6	9	10	6	4	4	0	4	1	0	1	0	0	0
15-19	633	518	115	223	410	518	220	298	59	1	58	53	2	51	3	0	3
20-24	1,183	978	205	284	899	978	275	703	91	2	89	102	4	98	12	3	9
25-29	1,032	864	168	192	840	864	189	675	73	1	72	75	1	74	20	1	19
30-34	652	553	99	127	525	553	124	429	35	0	35	49	1	48	15	2	13
35-39	229	197	32	56	173	197	55	142	12	0	12	15	1	14	5	0	5
40-44	37	27	10	8	29	27	8	19	2	0	2	7	0	7	1	0	1
45+	4	3	1	2	2	3	2	1	0	0	0	1	0	1	0	0	0
Total	3,785	3,150	635	898	2,887	3,150	879	2,271	276	4	272	303	9	294	56	6	50

[a] Includes Whites of Hispanic origin

[b] Includes Non-Whites of Hispanic origin

Note: In previous years, Hispanics as an ethnic category have been restricted to White Hispanics

TABLE 7-15

BIRTH RATIOS[a] OF LOW-BIRTHWEIGHT BABIES BY MOTHER'S ETHNICITY AND AGE GROUP, ARIZONA, 1986

Age	All Ethnic Groups	White[b]	Non-White[c]	Hispanic All Races	Non Hispanic All Races	WHITE			BLACK			NATIVE AMERICAN			OTHER		
						All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic	All	Hispanic	Non-Hispanic
< 15	9.9	10.2	9.3	9.2	10.3	10.2	9.8	10.8	33.3	-	33.3	2.4	-	2.6	-	-	-
15-19	7.7	7.8	7.4	7.8	7.6	7.8	8.0	7.6	12.6	10.0	12.6	5.1	2.8	5.2	6.7	-	7.7
20-24	6.1	5.9	6.9	5.6	6.2	5.9	5.6	6.1	11.7	**	11.2	5.1	4.5	5.1	6.7	14.3	5.7
25-29	5.6	5.3	7.5	5.1	5.7	5.3	5.1	5.3	13.5	**	13.4	5.5	1.9	5.6	6.2	5.6	6.3
30-34	6.2	6.0	7.4	6.7	6.1	6.0	6.6	5.9	13.1	-	13.2	5.8	4.2	5.9	6.6	12.5	6.2
35-39	6.8	6.9	6.4	8.3	6.5	6.9	8.3	6.5	14.5	-	14.8	4.4	**	4.1	6.6	-	7.0
40-44	7.4	6.5	12.0	6.7	7.7	6.5	6.8	6.4	**	-	**	10.8	-	10.9	9.1	-	10.0
45+	23.5	20.0	**	**	20.0	20.0	**	**	-	-	-	**	-	**	-	-	-
Total	6.2	6.0	7.3	6.2	6.2	6.0	6.2	6.0	12.8	14.8	12.8	5.3	3.6	5.4	6.5	9.0	6.3

[a] Low-birthweight births ratios per 100 live births in corresponding group and calculated only if at least ten live births recorded in 1986

[b] Includes Whites of Hispanic origin

[c] Includes Non-Whites of Hispanic origin

\- No low-birthweight births recorded in 1986

** Fewer than ten live births

Note: In previous years, Hispanics as an ethnic category have been restricted to White Hispanics

TABLE 7-16

DISTRIBUTION OF LOW-BIRTHWEIGHT BIRTHS AND LBW RISK* BY AMOUNT OF PRENATAL CARE AND COUNTY OF RESIDENCE, ARIZONA, 1986

County	Total low-birthweight births	Frequency distribution of LBW births — Prenatal care**					Percent distribution of LBW births — Prenatal care					Birth Ratios of low-birthweight babies — Prenatal care				
		None	1-4	5-9	9+	Unknown	None	1-4	5-8	9+	Unknown	None	1-4	5-8	9+	Unknown
ARIZONA	3,785	186	491	941	2,005	162	4.9	13.0	24.9	53.0	4.2	16.0	12.4	8.1	4.7	12.3
Apache	129	6	19	45	51	8	4.6	14.7	34.9	39.5	6.2	13.0	9.1	9.3	5.2	21.1
Cochise	87	2	12	34	36	3	2.3	13.8	39.1	41.4	3.4	11.1	12.6	9.7	3.5	7.5
Coconino	113	6	18	26	61	2	5.3	15.9	23.0	54.0	1.8	11.5	11.3	6.6	5.0	22.2
Gila	50	5	11	9	25	0	10.0	22.0	18.0	50.0	-	27.8	13.4	6.0	6.9	-
Graham	29	1	5	8	15	0	3.4	17.2	27.6	51.7	-	14.3	11.4	7.5	6.5	-
Greenlee	4	0	0	2	2	0	-	-	50.0	50.0	-	-	-	6.5	3.6	-
La Paz	18	2	3	5	2	6	11.1	16.7	27.8	11.1	33.3	28.6	16.7	10.4	2.8	8.5
Maricopa	2,232	89	234	510	1,275	124	4.0	10.5	22.8	57.1	5.6	19.0	15.0	9.6	4.7	13.9
Mohave	73	4	19	26	23	1	5.5	26.0	35.6	31.5	1.4	16.0	12.1	7.1	4.8	2.8
Navajo	111	9	14	27	56	5	8.1	12.6	24.3	50.4	4.5	16.4	6.0	5.1	5.6	7.1
pima	607	37	107	151	309	3	6.2	17.6	24.9	50.9	0.5	13.0	11.5	6.1	4.6	8.3
Pinal	138	8	23	37	68	2	5.8	16.7	26.8	49.3	1.4	18.6	10.3	6.3	5.8	8.3
Santa Cruz	35	0	8	11	16	0	-	22.9	31.4	45.7	-	-	12.3	7.6	5.7	-
Yavapai	62	2	7	20	31	2	3.2	11.3	32.3	50.0	3.2	18.2	14.9	13.4	3.5	6.7
Yuma	97	15	11	30	35	6	15.5	11.3	30.9	36.1	6.2	13.3	9.8	6.2	2.9	12.0

* Low-birthweight babies as a percent of all live birth in specific category

** Number of prenatal visits

TABLE 7-17

BIRTHS TO UNWED MOTHERS BY MOTHER'S COUNTY OF RESIDENCE AND AGE GROUP
Arizona, 1986

County Residence	ALL AGES		Under 15	15/19	20/24	25/29	30/34	35/39	40/44	45 & Over
	Number	Percent								
ARIZONA	15,600	-	146	5,027	5,839	2,797	1,260	450	78	3
Percent	-	100.0	0.9	32.2	37.4	17.9	8.1	2.9	0.5	0.0
Apache	833	5.3	9	200	318	175	91	31	9	0
Cochise	299	1.9	0	88	130	54	17	7	3	0
Coconino	614	3.9	4	194	218	114	61	20	2	1
Gila	204	1.3	4	61	76	42	18	3	0	0
Graham	107	0.7	3	50	35	7	10	2	0	0
Greenlee	17	0.1	0	13	2	1	1	0	0	0
La Paz	56	0.5	0	14	26	13	2	1	0	0
Maricopa	8,389	53.8	82	2,852	3,118	1,499	596	210	30	2
Mohave	271	1.7	2	68	117	45	29	9	1	0
Navajo	768	4.9	10	217	302	132	73	28	6	0
Pima	2,624	16.8	17	805	960	486	238	100	18	0
Pinal	740	4.7	9	251	295	110	52	18	5	0
Santa Cruz	104	0.7	0	27	36	22	11	6	2	0
Yavapai	192	1.2	2	66	67	32	16	7	2	0
Yuma	382	2.5	4	121	139	65	45	8	0	0

TABLE 7-18

BIRTHS TO UNWED MOTHERS BY MOTHER'S COUNTY OF RESIDENCE, RACE AND EDUCATION
ARIZONA, 1986

		ETHNIC GROUP				EDUCATION				
County of Residence	Total	White	Native American	Black	Asian	Elementary*	High School	College	Advanced Degree	Not Stated
ARIZONA	15,600	11,168	3,158	1,186	88	1,886	11,284	2,051	111	268
Percent	100.0	71.6	20.2	7.6	0.6	12.1	72.3	13.1	0.7	1.7
Apache	833	32	800	1	0	66	590	153	3	21
Cochise	299	273	2	21	3	37	200	53	-	9
Coconino	614	161	439	14	0	52	457	98	4	3
Gila	204	98	103	1	2	11	177	13	2	1
Graham	107	79	25	2	1	6	92	9	-	-
Greenlee	17	17	0	0	0	1	15	1	-	-
La Paz	56	38	16	2	0	4	36	4	-	12
Maricopa	8,389	6,928	542	865	54	1,167	5,889	1,094	52	187
Mohave	271	242	26	2	1	16	215	3	6	3
Navajo	768	93	671	3	1	72	580	92	6	18
Pima	2,624	2,076	327	200	21	236	2,001	347	39	6
Pinal	740	499	182	59	0	104	555	75	-	6
Santa Cruz	104	103	0	1	0	18	78	6	2	-
Yavapai	192	180	12	0	0	18	136	35	2	1
Yuma	382	249	13	15	5	78	263	40	-	1

* Eight grades or less

TABLE 7-19

BIRTHS WITH CONGENITAL ANOMALIES MENTIONED ON BIRTH CERTIFICATE BY COUNTY OF RESIDENCE
ARIZONA, 1986

Congenital Anomalies	Arizona	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma
TOTAL	482	30	9	31	8	12	-	6	203	30	27	82	28	3	8	5
Rate per 1,000 Births	7.9	17.4	5.9	17.0	12.8	30.4	-	27.9	5.7	28.2	14.2	7.9	13.6	5.9	7.1	2.5
Anencephalus and Similar Anomalies	6	1	-	-	-	-	-	-	3	-	-	2	-	-	-	-
Spina Bifida	12	-	-	1	-	1	-	1	5	1	-	2	-	-	-	1
Other Congenital Anomalies of Nervous System	21	2	-	-	-	-	-	-	11	-	-	6	1	-	1	-
Congenital Anomalies of Eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Congenital Anomalies of Ear, Face, and Neck	21	-	-	3	-	-	-	1	7	1	1	3	4	-	1	-
Bulbus Cordis Anomalies and Anomalies of Cardial Septal Closure	13	-	-	5	-	-	-	-	2	-	2	4	-	-	-	-
Other Congenital Anomalies of Heart	20	3	-	1	1	1	-	-	7	3	2	1	1	-	-	-
Other Congenital Anomalies of Circulatory System	8	1	-	-	-	-	-	-	2	3	-	1	-	-	1	-
Congenital Anomalies of Respiratory System	5	-	-	1	-	-	-	-	1	-	-	1	2	-	-	-
Cleft Palate and Cleft Lip	44	4	1	1	-	1	-	-	20	-	3	9	1	1	2	1
Other Congenital Anomalies of Upper Alimentary Tract	5	-	-	-	-	-	-	-	3	1	-	-	1	-	-	-
Other Congenital Anomalies of Digestive System	7	-	-	-	-	-	-	-	5	-	-	2	-	-	-	-
Congenital Anomalies of Genital Organs	24	2	-	1	-	5	-	-	11	2	2	1	-	-	-	-
Congenital Anomalies of Urinary System	6	-	-	-	-	-	-	-	3	1	-	2	-	-	-	-
Certain Congenital Musculoskeletal Deformities	42	6	2	5	1	-	-	-	14	2	2	4	5	-	-	1
Other Congenital Anomalies of Limbs	70	2	1	4	2	1	-	1	32	-	11	11	3	1	-	1
Other Congenital Musculoskeletal Anomalies	19	-	1	-	-	-	-	-	7	1	1	6	2	-	1	-
Congenital Anomalies of the Integument	46	1	2	1	1	-	-	2	17	9	-	7	5	-	1	-
Chromosomal Anomalies	31	5	1	2	-	1	-	-	13	3	-	5	1	-	-	-
Other and Unspecified Anomalies	82	3	1	6	3	2	-	1	40	3	3	15	2	1	1	1

TABLE 7-20

BIRTHS WITH CONGENITAL ANOMALIES MENTIONED ON BIRTH CERTIFICATE BY ETHNIC GROUP AND SEX OF CHILD
ARIZONA, 1986

Congenital Anomalies	All Ethnic Groups	White	Non-White	White		Native Americans			Black			Asian		
				M	F	T	M	F	T	M	F	T	M	F
Total Births	60,822	51,611	9,211	26,396	25,215	5,652	2,802	2,850	2,730	1,424	1,306	829	427	402
Total Births with Anomalies Mentioned	482	362	120	212	150	93	38	55	22	14	8	5	2	3
Rate per 1,000 Births	7.9	7.0	13.0	8.0	5.9	16.4	13.6	19.3	8.1	9.8	6.1	6.0	4.7	7.5
Anencephalus and Similar Anomalies	6	5	1	4	1	1	1	-	-	-	-	-	-	-
Spina Bifida	12	9	3	6	3	2	-	2	1	1	-	-	-	-
Other Congenital Anomalies of Nervous System	21	17	4	9	8	2	1	1	2	1	1	-	-	-
Congenital Anomalies of Eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Congenital Anomalies of Ear, Face, and Neck	21	12	9	4	8	6	3	3	2	1	1	1	-	1
Bulbus Cordis Anomalies and Anomalies of Cardiac Septal Closure	13	7	6	4	3	6	3	3	-	-	-	-	-	-
Other Congenital Anomalies of Heart	20	14	6	6	8	6	2	4	-	-	-	-	-	-
Other Congenital Anomalies of Circulatory System	8	7	1	3	4	1	-	1	-	-	-	-	-	-
Congenital Anomalies of Respiratory System	5	4	1	4	-	1	1	-	-	-	-	-	-	-
Cleft Palate and Cleft Lip	44	32	12	16	16	12	3	9	-	-	-	-	-	-
Other Congenital Anomalies of Upper Alimentary Tract	5	5	-	3	4	-	-	-	-	-	-	-	-	-
Other Congenital Anomalies of Digestive System	7	7	-	3	4	-	-	-	-	-	-	-	-	-
Congenital Anomalies of Genital Organs	24	19	5	19	-	4	4	-	1	1	-	-	-	-
Congenital Anomalies of Urinary System	6	5	1	4	1	-	-	-	1	1	-	-	-	-
Certain Congenital Musculoskeletal Deformities	42	30	12	13	17	12	7	5	-	-	-	-	-	-
Other Congenital Anomalies of Limbs	70	41	29	25	16	16	6	10	10	7	3	3	1	2
Other Congenital Musculoskeletal Anomalies	19	17	2	7	10	2	1	1	-	-	-	-	-	-
Congenital Anomalies of the Integument	46	39	7	19	20	4	1	3	3	2	1	-	-	-
Chromosomal Anomalies	31	24	7	16	8	6	2	4	-	-	-	1	1	-
Other and Unspecified Congenital Anomalies	82	68	14	48	20	12	3	9	2	-	2	-	-	-

TABLE 7-21

FREQUENCY DISTRIBUTION OF BIRTHS BY AMOUNT OF PRENATAL CARE AND COUNTY OF RESIDENCE, ARIZONA, 1986

County	Total	None	1-4	5-8	8+	Unknown
ARIZONA	60,822	1,162	3,955	11,609	42,782	1,314
Apache	1,757	46	208	483	982	38
Cochise	1,524	18	95	350	1,021	40
Coconino	4,828	52	160	396	1,211	9
Gila	625	18	82	150	364	11
Graham	395	7	44	107	232	5
Greenlee	106	-	18	31	56	1
La Paz	215	7	18	48	71	71
Maricopa	35,334	469	1,563	5,318	27,092	892
Mohave	1,065	25	157	368	479	36
Navajo	1,896	55	235	530	1,006	70
Pima	10,423	285	928	2,462	6,712	36
Pinal	2,053	43	223	590	1,173	24
Santa Cruz	504	13	65	145	280	1
Yavapai	1,129	11	47	149	892	30
Yuma	1,968	113	112	482	1,211	50

TABLE 7-22

FREQUENCY DISTRIBUTION OF BIRTHS BY MOTHER'S AGE GROUP AND RACE AND TRIMESTER OF PREGNANCY PRENATAL CARE BEGAN, ARIZONA, 1986

Trimester of pregnancy prenatal care began by race	ALL AGES	15	15-17	18-19	20-24	25-29	30-34	35-39	39+
ALL RACES*	60,822	152	2,914	5,310	19,505	18,562	10,505	3,357	517
1st trimester	43,800	62	1,548	2,949	13,255	14,560	8,461	2,599	366
2nd trimester	12,012	61	959	1,623	4,321	2,869	1,521	555	103
3rd trimester	3,737	17	297	558	1,428	875	380	145	37
No prenatal care	1,141	11	107	171	448	222	122	51	11
Not stated	132	1	3	9	53	36	21	7	-
WHITE	52,086	98	2,266	4,400	16,536	16,331	9,172	2,854	431
1st trimester	38,434	38	1,228	2,491	11,487	13,047	7,564	2,266	313
2nd trimester	9,689	42	723	1,308	3,505	2,387	1,204	442	78
3rd trimester	2,964	10	233	466	1,143	680	299	101	32
No prenatal care	886	8	79	128	354	185	86	38	8
Not stated	115	-	3	7	47	32	19	7	-
BLACK	2,157	12	208	261	777	541	268	83	7
1st trimester	1,466	6	116	138	510	417	206	69	4
2nd trimester	478	6	69	89	174	80	46	12	2
3rd trimester	153	-	17	21	65	36	12	2	-
No prenatal care	60	-	6	13	28	8	4	-	1
Not stated	-	-	-	-	-	-	-	-	-
NATIVE AMERICAN	5,718	42	428	616	2,012	1,369	839	344	68
1st trimester	3,269	18	200	303	1,134	846	528	200	40
2nd trimester	1,676	13	163	213	604	390	216	94	23
3rd trimester	572	7	44	69	205	141	63	40	3
No prenatal care	184	3	21	29	63	28	28	10	2
Not stated	17	1	-	2	6	4	4	-	-
ASIAN	859	-	12	33	180	321	226	76	11
1st trimester	631	-	4	17	124	250	163	64	9
2nd trimester	169	-	4	13	38	52	55	7	-
3rd trimester	48	-	3	2	15	18	6	2	2
No prenatal care	11	-	1	1	3	1	2	3	-
Not stated	-	-	-	-	-	-	-	-	-

* Included records with unknown or unspecified race

DEATH STATISTICS

TABLE 8-1

MORTALITY BY COUNTY OF RESIDENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	6,317	10,067	14,857	16,964	21,226	21,318	21,951	22,482	23,785	24,577	25,409
Apache	255	266	266	316	302	302	317	294	306	330	335
Cochise	322	428	511	512	631	628	644	712	664	687	662
Coconino	161	267	288	278	309	308	339	320	341	379	383
Gila	245	253	282	284	330	337	417	385	396	381	399
Graham	112	123	149	174	171	184	164	184	175	169	189
Greenlee	87	71	77	74	86	52	73	61	66	47	50
La Paz	NA	NA	NA	NA	NA	NA	NA	140	154	136	128
Maricopa	2,735	5,011	7,895	9,147	11,769	11,923	12,214	12,433	13,398	13,661	14,106
Mohave	90	97	238	406	549	548	612	593	607	753	795
Navajo	300	273	341	355	415	415	400	406	428	460	484
Pima	1,051	2,058	3,062	3,511	4,311	4,253	4,279	4,506	4,734	4,865	5,090
Pinal	401	474	548	579	731	745	741	782	814	785	942
Santa Cruz	63	78	90	120	121	125	135	131	150	148	147
Yavapai	267	348	555	647	801	813	878	961	964	1,057	1,032
Yuma	228	320	555	561	700	685	738	574	588	719	667

TABLE 8-2

MORTALITY RATES* BY COUNTY OF RESIDENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
U.S.	9.6	9.5	9.4	8.5	8.8	8.6	8.5	8.6	8.7	8.7	8.7**
ARIZONA	8.4	7.7	8.4	7.6	7.8	7.6	7.6	7.7	7.8	7.7	7.6
Apache	9.2	8.7	8.2	7.7	5.8	5.8	5.7	5.2	5.9	5.8	5.5
Cochise	10.2	7.8	8.3	6.9	7.3	7.1	7.2	7.8	7.3	7.1	6.8
Coconino	6.7	6.4	6.0	4.3	4.1	3.8	4.1	3.9	4.1	4.4	4.3
Gila	10.1	9.8	9.6	8.7	8.9	8.9	10.9	9.9	10.5	10.0	10.0
Graham	8.6	8.8	9.0	8.6	7.5	7.9	6.9	7.6	7.3	7.2	7.7
Greenlee	6.8	6.2	7.5	6.2	7.5	4.3	5.6	5.1	5.8	5.4	5.2
La Paz	NA	NA	NA	NA	NA	NA	NA	10.8	11.5	9.4	9.1
Maricopa	8.2	7.6	8.1	7.5	7.8	7.7	7.6	7.6	7.7	7.6	7.4
Mohave	10.6	12.5	9.2	10.9	9.8	9.7	10.7	9.9	9.3	10.4	10.3
Navajo	10.2	7.2	7.2	6.1	6.1	6.0	5.6	5.6	6.0	6.4	6.5
Pima	7.4	7.7	8.7	8.0	8.1	7.7	7.5	7.7	7.9	7.8	7.9
Pinal	9.3	7.6	8.0	6.6	8.0	8.0	7.8	8.1	8.3	7.8	9.1
Santa Cruz	6.7	7.2	6.4	6.9	5.9	5.9	6.1	5.9	6.7	5.5	5.3
Yavapai	10.7	12.0	15.0	13.2	11.8	11.7	12.2	13.1	11.9	12.0	11.2
Yuma	8.1	6.9	9.1	8.0	7.7	7.5	7.8	7.1	6.9	8.0	7.6

* Per 1,000 estimated mid-year population

** Preliminary

TABLE 8-3

MORTALITY BY COUNTY OF OCCURRENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	6,822	10,557	15,259	17,450	22,054	21,925	22,655	23,205	24,598	25,382	26,404
Apache	308	315	184	231	240	199	231	212	202	250	254
Cochise	315	387	474	434	499	483	519	589	556	566	551
Coconino	183	322	304	326	382	363	392	391	439	469	493
Gila	240	233	276	254	284	303	355	304	308	299	312
Graham	102	102	132	145	132	133	117	154	144	141	139
Greenlee	76	71	63	58	61	40	59	38	42	19	27
La Paz	NA	NA	NA	NA	NA	NA	NA	118	120	120	132
Maricopa	2,958	5,318	8,275	9,671	12,671	12,730	13,169	13,450	14,614	14,791	15,345
Mohave	95	110	218	377	447	440	474	495	568	642	764
Navajo	266	224	291	273	303	325	294	290	298	306	382
Pima	1,251	2,193	3,355	3,940	4,960	4,826	4,847	5,060	5,234	5,413	5,596
Pinal	418	453	443	395	484	462	467	485	437	496	573
Santa Cruz	67	83	92	92	81	87	99	99	111	110	114
Yavapai	308	429	613	665	786	787	833	870	874	978	977
Yuma	235	317	539	589	724	747	799	650	651	782	745

TABLE 8-4

RESIDENT MORTALITY BY MONTH OF OCCURRENCE
ARIZONA, 1970-86

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1970	1,305	1,231	1,273	1,206	1,305	1,189	1,215	1,198	1,155	1,236	1,265	1,279	14,857
Percent	8.8	8.3	8.6	8.1	8.8	8.0	8.0	8.1	7.8	8.3	8.5	8.6	100.0
1980	1,904	1,649	1,835	1,729	1,686	1,663	1,726	1,651	1,646	1,659	1,779	2,299	21,226
Percent	9.0	7.8	8.6	8.1	7.9	7.8	8.1	7.8	7.8	7.8	8.4	10.8	100.0
1981	2,098	1,666	1,856	1,828	1,742	1,642	1,774	1,715	1,612	1,747	1,765	1,873	21,318
Percent	9.8	7.8	8.7	8.6	8.2	7.7	8.3	8.0	7.6	8.2	8.3	8.8	100.0
1982	2,013	1,013	1,948	1,790	1,762	1,687	1,734	1,781	1,727	1,815	1,723	1,958	21,951
Percent	9.2	9.2	8.9	8.2	8.0	7.7	7.9	8.1	7.9	8.3	7.8	8.9	100.0
1983	1,982	1,902	1,979	1,968	1,924	1,677	1,805	1,803	1,765	1,822	1,847	2,008	22,482
Percent	8.8	8.5	8.8	8.8	8.6	7.5	8.0	8.0	7.9	8.1	8.2	8.9	100.0
1984	2,014	1,978	2,244	2,108	2,036	1,865	1,833	1,852	1,737	1,935	2,011	2,172	23,785
Percent	8.5	8.3	9.4	8.9	8.6	7.8	7.7	7.8	7.3	8.1	8.5	9.1	100.0
1985	2,314	2,201	2,110	1,966	2,017	1,956	1,952	1,874	1,919	1,958	2,042	2,268	24,577
Percent	9.4	9.0	8.6	8.0	8.2	8.0	7.9	7.6	7.8	8.0	8.3	9.2	100.0
1986	2,412	2,163	2,283	2,068	2,053	2,061	2,015	2,112	1,942	2,090	1,996	2,214	25,409
Percent	9.5	8.5	9.0	8.1	8.1	8.1	7.9	8.3	7.6	8.2	7.9	8.7	100.0

TABLE 8-5

MORTALITY BY FIVE-YEAR AGE GROUPS AND COUNTY OF RESIDENCE
ARIZONA, 1986

County	All Ages	Under 1 Day	1-6 Days	7-27 Days	28 & Over	Total Infant	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unknown
ARIZONA	25,409	103	93	53	238	569	168	72	77	283	395	414	442	509	476	569	828	1,287	1,988	2,785	3,469	3,654	3,229	4,128	47
Apache	335	3	3	3	7	16	4	4	2	18	11	17	13	18	16	13	18	13	21	20	34	29	18	48	-
Cochise	662	2	2	1	3	8	4	1	2	5	10	5	10	11	16	19	21	38	45	85	95	86	83	113	5
Coconino	383	4	-	2	12	18	12	5	1	7	20	15	14	9	9	12	23	19	25	32	47	27	41	47	-
Gila	399	3	2	-	3	8	2	-	-	3	2	1	6	9	9	4	18	20	46	54	58	54	49	55	1
Graham	189	2	1	-	2	5	2	2	-	5	6	4	2	2	3	2	8	6	9	22	22	42	18	28	1
Greenlee	50	1	-	-	-	1	-	-	-	-	-	-	-	3	-	1	-	3	6	7	9	8	8	4	-
La Paz	128	-	-	-	-	-	2	-	2	4	2	-	1	4	2	3	4	6	15	15	22	18	12	14	2
Maricopa	14,106	115	59	30	136	340	99	40	42	137	220	234	232	282	269	352	421	733	1,068	1,533	1,914	2,[illegible]	1,780	2,305	18
Mohave	795	2	-	2	7	11	3	3	-	8	7	7	10	20	13	15	23	47	96	111	128	[illegible]	87	80	3
Navajo	484	1	2	1	8	12	7	2	7	13	16	15	22	19	10	13	30	27	42	48	36	48	52	65	-
Pima	5,090	42	17	7	28	94	16	9	12	52	57	85	82	89	86	96	166	219	388	531	686	730	713	976	3
Pinal	942	4	3	5	15	27	9	2	3	15	23	15	29	18	19	20	45	48	88	106	125	124	122	102	2
Santa Cruz	147	2	1	-	1	4	1	1	-	1	2	2	3	2	1	4	5	11	10	15	19	22	20	24	-
Yavapai	1,032	1	2	2	8	13	5	2	2	7	6	7	10	15	13	16	15	43	69	124	181	165	149	190	-
Yuma	667	3	1	-	8	12	2	1	4	8	13	7	8	8	10	19	31	52	60	82	93	91	77	77	12

TABLE 8-6

MORTALITY BY COUNTY OF RESIDENCE, RACE AND GENDER
ARIZONA, 1986

County of Residence	All Deaths	TOTAL All Races		White		Total Non-White		Black		Native Americans		Other	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
ARIZONA	25,409	14,267	11,142	13,184	10,446	1,083	696	366	233	665	427	52	36
Apache	335	213	122	46	28	167	94	-	2	167	92	-	-
Cochise	662	383	279	369	275	14	4	13	4	-	-	1	-
Coconino	383	226	157	147	109	79	48	4	1	72	47	3	-
Gila	399	230	169	195	150	35	19	-	1	35	18	-	-
Graham	189	118	71	109	64	9	7	2	-	7	6	-	1
Greenlee	50	32	18	31	18	1	-	-	-	1	-	-	-
La Paz	128	84	44	69	41	15	-	2	-	13	-	-	-
Maricopa	14,106	7,794	6,312	7,438	6,081	356	231	231	146	91	64	34	21
Mohave	795	503	292	489	285	14	7	1	-	12	7	1	-
Navajo	484	261	223	123	128	138	95	1	3	137	92	-	-
Pima	5,090	2,762	2,328	2,600	2,201	162	127	81	57	73	57	8	13
Pinal	942	599	343	534	300	65	43	15	10	49	33	1	-
Santa Cruz	147	82	65	81	65	1	-	1	-	-	-	-	-
Yavapai	1,032	595	437	588	432	7	5	-	2	5	3	2	-
Yuma	667	385	282	365	269	20	13	15	7	3	5	2	1

TABLE 8-7

HISPANIC MORTALITY BY COUNTY OF RESIDENCE, RACE AND GENDER
ARIZONA, 1986

County of Residence	All Deaths	TOTAL All Races		White		Total Non-White		Black		Native Americans		Other	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
ARIZONA	1,995	1,161	834	1,142	820	19	14	5	5	11	5	3	4
Apache	14	11	3	10	3	1	-	-	-	1	-	-	-
Cochise	103	60	43	59	43	1	-	-	-	-	-	1	-
Coconino	28	18	10	17	10	1	-	-	-	1	-	-	-
Gila	39	25	14	25	14	-	-	-	-	-	-	-	-
Graham	29	17	12	16	12	1	-	1	-	-	-	-	-
Greenlee	18	12	6	12	6	-	-	-	-	-	-	-	-
La Paz	2	2	-	1	-	1	-	-	-	1	-	-	-
Maricopa	856	506	350	498	340	8	10	3	3	4	4	1	3
Mohave	12	8	4	8	4	-	-	-	-	-	-	-	-
Navajo	30	19	11	18	11	1	-	-	-	1	-	-	-
Pima	520	275	245	271	242	4	3	1	2	3	-	-	1
Pinal	122	84	38	84	38	-	-	-	-	-	-	-	-
Santa Cruz	76	41	35	41	35	-	-	-	-	-	-	-	-
Yavapai	28	15	13	14	13	1	-	-	-	-	-	1	-
Yuma	118	68	50	68	49	-	1	-	-	-	1	-	-

TABLE 8-8

FETAL MORTALITY BY COUNTY OF OCCURRENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	381	463	385	351	428	394	434	393	371	432	391
Apache	13	14	14	9	6	16	12	14	13	10	13
Cochise	8	29	26	19	10	13	12	7	9	10	8
Coconino	13	20	9	12	16	17	22	25	18	22	12
Gila	18	10	12	8	3	8	3	7	5	2	4
Graham	4	5	2	6	2	3	2	4	3	1	5
Greenlee	7	4	3	4	2	1	2	1	-	-	-
La Paz	NA	NA	NA	NA	NA	NA	NA	1	-	-	-
Maricopa	175	228	200	166	229	198	225	190	211	232	225
Mohave	2	4	4	5	5	3	4	8	10	10	11
Navajo	11	21	9	20	5	11	11	10	10	14	6
Pima	68	77	69	54	113	97	115	89	70	91	83
Pinal	27	28	12	25	9	10	6	7	7	4	7
Santa Cruz	6	4	3	8	3	4	1	3	3	-	-
Yavapai	14	6	8	3	8	2	9	7	5	11	6
Yuma	15	13	14	12	17	11	10	20	7	15	11

TABLE 8-9

FETAL MORTALITY RATES* BY COUNTY OF OCCURRENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	18.6	12.6	10.2	8.9	8.5	7.6	8.2	7.4	6.7	7.1	6.4
Apache	17.1	9.5	10.2	6.3	4.9	9.5	6.5	7.8	7.2	5.4	7.4
Cochise	10.5	17.6	19.2	12.6	6.6	7.9	7.7	4.5	5.6	6.4	5.2
Coconino	16.9	13.8	6.4	8.1	7.1	9.8	12.4	13.8	9.9	11.3	6.6
Gila	25.1	13.4	17.3	12.0	5.2	10.5	3.7	10.2	7.4	3.1	6.4
Graham	10.4	15.0	5.4	14.2	5.0	5.9	4.3	9.2	6.7	2.5	12.7
Greenlee	15.9	15.7	12.9	13.5	6.5	3.3	7.8	5.4	-	-	-
La Paz*	NA	NA	NA	NA	NA	NA	NA	4.2	-	-	-
Maricopa	19.9	12.8	10.2	8.3	8.2	7.1	7.9	6.6	6.9	6.9	6.4
Mohave	8.7	21.7	8.6	9.2	5.8	3.4	4.5	8.6	10.1	10.3	10.3
Navajo	12.3	14.6	6.1	12.3	4.2	6.1	5.8	5.2	5.4	7.4	3.2
Pima	17.6	10.8	10.2	7.4	11.4	10.6	12.6	9.3	7.2	8.8	8.0
Pinal	19.2	14.4	7.7	14.6	9.8	5.3	3.1	3.7	3.8	1.9	3.4
Santa Cruz	24.0	11.6	10.1	22.2	9.7	7.7	2.0	6.6	5.9	-	-
Yavapai	28.5	9.5	14.7	4.8	9.5	2.0	8.4	6.8	5.0	10.1	5.3
Yuma	20.5	10.2	10.1	7.5	10.2	5.7	5.3	11.9	4.0	7.6	5.6

* Per 1,000 live births

TABLE 8-10

FETAL MORTALITY BY COUNTY OF OCCURRENCE, RACE AND SEX OF CHILD
ARIZONA, 1986

County of Occurrence	TOTAL FETAL DEATHS			WHITE		NATIVE AMERICANS			BLACK			ASIAN		
	All	White	Non-White	M	F	T	M	F	T	M	F	T	M	F
TOTAL	391	314	77	158	144	44	20	24	24	13	11	9	3	6
Apache	13	2	11	-	2	11	7	4	-	-	-	-	-	-
Cochise	8	5	3	4	1	1	-	1	2	2	-	-	-	-
Coconino	12	9	3	3	6	3	2	1	-	-	-	-	-	-
Gila	4	3	1	1	2	1	-	1	-	-	-	-	-	-
Graham	5	5	-	4	1	-	-	-	-	-	-	-	-	-
Greenlee	-	-	-	-	-	-	-	-	-	-	-	-	-	-
La Paz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maricopa	225	200	25	103	87	17	6	11	13	6	7	5	1	4
Mohave	11	11	-	4	7	-	-	-	-	-	-	-	-	-
Navajo	6	3	3	2	1	3	1	2	-	-	-	-	-	-
Pima	83	67	16	32	35	5	3	2	7	4	3	4	2	2
Pinal	7	3	4	1	2	2	1	1	2	1	1	-	-	-
Santa Cruz	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yavapai	6	6	-	2	4	-	-	-	-	-	-	-	-	-
Yuma	11	10	1	4	6	1	-	1	-	-	-	-	-	-

TABLE 8-11

INFANT MORTALITY BY COUNTY OF RESIDENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	937	1,165	670	587	619	600	491	509	525	572	569
Apache	81	82	36	27	23	25	21	20	25	22	16
Cochise	26	44	19	24	19	22	14	20	23	15	8
Coconino	47	67	39	32	20	20	16	22	16	21	18
Gila	35	35	11	11	12	5	13	5	3	5	8
Graham	22	15	9	8	8	14	4	3	7	4	5
Greenlee	15	7	9	7	5	1	5	-	2	3	1
La Paz	NA	NA	NA	NA	NA	NA	NA	8	1	6	-
Maricopa	328	478	305	289	358	333	265	266	272	319	340
Mohave	11	4	3	6	18	8	11	9	8	7	11
Navajo	96	93	43	33	27	29	18	23	18	26	12
Pima	111	195	120	81	72	84	76	88	96	94	94
Pinal	97	75	36	31	17	17	19	17	27	18	27
Santa Cruz	12	9	5	5	3	5	3	3	4	4	4
Yavapai	19	19	8	8	11	15	10	11	11	9	13
Yuma	37	42	27	25	26	22	16	14	12	19	12

TABLE 8-12

INFANT MORTALITY RATES* BY AGE AND SELECTED CAUSES
ARIZONA, UNITED STATES: 1986

Age and Cause of Death	International Classification of Diseases, Ninth Revision	NUMBER	AZ. RATE	U.S.RATE**
Total - Under 1 Year		569	935.5	1,039.2
Under 28 Days		331	544.2	669.5
28 Days to 364 Days		238	391.3	369.7
Certain Gastrointestional Diseases	008-009,535,555-558	4	6.6	5.9
Pneumonia and Influenza	480-487	10	16.4	18.0
Congenital Anomalies	740-759	120	197.3	218.9
Disorders Relating to Short Gestation and Unspecified Low-Birthweight	765	64	105.2	87.9
Birth Trauma	767	2	3.3	8.6
Untrauterine Hypoxia and Birth Asphyxia	768	5	8.2	24.2
Respiratory Distress Syndrome	769	41	67.4	94.4
Other Conditions Originating in the Perinatal Period	760-764,766,770-779	117	192.4	266.2
Sudden Infant Death Syndrome	798.0	113	185.8	130.4
ALL OTHER CAUSES	RESIDUAL	93	152.9	184.7

* Per 100,000 Live Births
** Provisional

TABLE 8-13

INFANT MORTALITY BY COUNTY OF RESIDENCE, RACE AND GENDER
ARIZONA, 1986

County of Residence	ALL DEATHS			WHITE			NON-WHITE			NATIVE AMERICANS			BLACK			ASIAN		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
ARIZONA	569	338	231	459	271	188	110	67	43	67	37	30	41	29	12	2	1	1
Apache	16	10	6	1	-	1	15	10	5	15	10	5	-	-	-	-	-	-
Cochise	8	5	3	6	4	2	2	1	1	-	-	-	2	1	1	-	-	-
Coconino	18	12	6	7	6	1	11	6	5	11	6	5	-	-	-	-	-	-
Gila	8	5	3	2	1	1	6	4	2	6	4	2	-	-	-	-	-	-
Graham	5	4	1	4	3	1	1	1	-	-	-	-	1	1	-	-	-	-
Greenlee	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
La Paz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maricopa	340	201	139	296	175	121	44	26	18	14	5	9	28	20	8	2	1	1
Mohave	11	6	5	9	4	5	2	2	-	2	2	-	-	-	-	-	-	-
Navajo	12	6	6	4	1	3	8	5	3	8	5	3	-	-	-	-	-	-
Pima	94	52	42	80	44	36	14	8	6	5	2	3	9	6	3	-	-	-
Pinal	27	19	8	21	16	5	6	3	3	6	3	3	-	-	-	-	-	-
Santa Cruz	4	2	2	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Yavapai	13	6	7	13	6	7	-	-	-	-	-	-	-	-	-	-	-	-
Yuma	12	9	3	11	8	3	1	1	-	-	-	-	1	1	-	-	-	-

TABLE 8-14

HISPANIC INFANTS MORTALITY BY COUNTY OF RESIDENCE, RACE AND GENDER
ARIZONA, 1986

County of Residence	ALL DEATHS			WHITE			NON-WHITE			NATIVE AMERICANS			BLACK		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
ARIZONA	129	77	52	125	73	52	4	2	-	2	2	-	2	2	-
Apache	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cochise	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
Coconino	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Gila	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Graham	3	2	1	2	1	1	1	1	-	-	-	-	1	1	-
Greenlee	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
La Paz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maricopa	75	52	23	74	51	23	1	1	-	1	1	-	-	-	-
Mohave	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
Navajo	2	1	1	2	1	1	-	-	-	-	-	-	-	-	-
Pima	29	10	19	27	8	19	2	1	-	1	1	-	1	1	-
Pinal	6	5	1	6	5	1	-	-	-	-	-	-	-	-	-
Santa Cruz	4	2	2	4	2	2	-	-	-	-	-	-	-	-	-
Yavapai	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
Yuma	6	4	2	6	4	2	-	-	-	-	-	-	-	-	-

TABLE 8-15

INFANT MORTALITY RATES* BY COUNTY OF RESIDENCE, ETHNIC GROUP AND GENDER
ARIZONA, 1986

County of Residence	ALL INFANT DEATHS			WHITE			NON-WHITE			HISPANIC			NATIVE AMERICANS			BLACK		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
ARIZONA	9.4	10.9	8.3	8.9	10.3	7.5	11.9	14.4	9.4	7.5	8.9	6.1	11.8	13.2	10.5	15.0	20.4	9.2
Apache	9.1	11.1	7.0	3.5	-	7.5	10.2	13.3	6.9	-	-	-	10.2	13.4	6.9	-	-	-
Cochise	5.2	6.4	4.0	4.6	5.9	3.1	9.3	9.2	9.4	1.8	-	3.7	-	-	-	13.3	14.1	12.7
Coconino	9.8	13.1	6.6	7.1	12.0	2.1	13.	14.5	11.6	4.3	8.8	-	13.8	15.5	12.2	-	-	-
Gila	12.8	15.1	10.2	4.7	4.6	4.9	29.8	35.7	22.5	-	-	-	31.2	36.7	24.1	-	-	-
Graham	12.7	17.8	5.9	12.5	16.5	7.2	13.5	23.3	-	22.4	26.7	16.9	-	-	-	**	**	-
Greenlee	9.4	17.5	-	9.4	17.5	-	-	-	-	-	-	-	-	-	-	-	-	-
La Paz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Maricopa	9.6	11.1	8.	9.2	10.7	7.7	13.3	15.5	11.1	8.1	11.3	7.9	14.4	10.3	18.4	15.6	21.5	9.2
Mohave	10.3	11.1	9.5	8.9	7.8	9.9	4.	69.	-	10.2	-	25.6	46.5	80.0	-	-	-	-
Navajo	6.3	6.5	6.1	6.4	3.2	9.5	6.3	8.3	4.5	15.	14.3	15.9	6.4	8.5	4.6	-	-	-
Pima	9.0	9.7	8.3	8.6	9.2	8.0	12.2	13.5	10.7	7.3	5.0	9.5	11.0	9.0	12.8	17.1	21.1	12.4
Pinal	13.1	18.5	7.8	12.7	19.2	6.1	15.1	15.6	14.6	7.2	11.8	2.4	20.1	21.6	18.7	-	-	-
Santa Cruz	7.9	7.5	8.5	8.0	7.5	8.5	-	-	-	8.8	8.1	9.6	-	-	-	-	-	-
Yavapai	11.5	10.1	13.0	11.9	10.5	13.4	-	-	-	6.7	-	14.3	-	-	-	-	-	-
Yuma	6.1	9.0	3.1	6.0	8.6	3.3	7.3	14.3	-	5.8	7.6	3.9	-	-	-	13.0	27.0	-

* Rate per 1,000 live births in corresponding ethnic group, and calculated only if at least ten births recorded in that group in 1986.

** Fewer than ten live births in 1986.

\- No infant deaths recorded in 1986.

TABLE 8-16

NEONATAL MORTALITY BY COUNTY OF RESIDENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	534	711	468	381	414	381	305	314	305	348	331
Apache	NA	30	17	10	9	12	6	11	9	12	9
Cochise	NA	30	16	18	13	15	10	15	13	8	5
Coconino	NA	24	26	17	11	11	10	13	5	9	6
Gila	NA	19	9	6	8	2	8	2	1	3	5
Graham	NA	8	6	4	4	10	2	2	4	2	3
Greenlee	NA	5	5	6	2	-	5	-	2	2	1
La Paz	NA	NA	NA	NA	NA	NA	NA	3	1	4	-
Maricopa	NA	333	229	206	260	230	174	167	170	197	204
Mohave	NA	1	3	5	10	4	5	4	6	2	4
Navajo	NA	33	15	18	15	15	8	9	8	13	4
Pima	NA	142	86	47	48	53	47	56	62	68	66
Pinal	NA	39	28	18	14	8	8	15	11	7	12
Santa Cruz	NA	6	3	4	3	2	2	2	2	4	3
Yavapai	NA	12	6	4	4	5	6	7	5	6	5
Yuma	NA	29	19	18	13	14	14	8	6	11	4

TABLE 8-17

NEONATAL MORTALITY RATES* BY COUNTY OF RESIDENCE
ARIZONA, UNITED STATES: 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
U.S.	20.6	18.7	15.1	11.8	8.4	7.9	7.7	7.3	6.9	6.9	6.7**
ARIZONA	26.6	19.4	12.4	9.6	8.3	7.4	5.8	5.9	5.5	5.9	5.4
Apache	NA	20.3	12.4	6.9	5.5	7.1	3.3	6.2	5.0	6.5	5.1
Cochise	NA	18.2	11.8	11.9	8.2	9.1	6.4	9.6	8.0	5.1	3.3
Coconino	NA	16.5	18.5	11.5	6.0	6.3	5.7	7.2	2.8	4.6	3.3
Gila	NA	25.5	13.0	9.0	11.3	2.6	9.9	2.9	1.5	4.7	8.0
Graham	NA	24.0	16.2	9.4	7.8	19.6	4.3	4.6	9.0	4.9	7.6
Greenlee	NA	19.6	21.6	20.2	7.3	-	19.5	-	10.3	12.4	9.4
La Paz	NA	NA	NA	NA	NA	NA	NA	12.7	5.1	17.1	-
Maricopa	NA	18.7	11.6	10.3	9.7	8.3	6.1	5.8	5.5	5.8	5.8
Mohave	NA	5.4	6.5	9.1	11.5	4.5	5.6	4.3	6.1	2.1	3.8
Navajo	NA	22.9	10.1	11.0	7.9	8.3	4.2	4.7	4.3	6.9	2.1
Pima	NA	19.9	12.8	6.4	5.4	5.8	5.1	5.8	6.4	6.6	6.3
Pinal	NA	20.1	18.0	10.5	7.6	4.2	4.1	8.0	5.9	3.4	5.8
Santa Cruz	NA	17.4	10.1	11.0	6.0	3.9	4.1	4.4	3.9	7.6	5.9
Yavapai	NA	19.0	11.0	6.3	4.3	5.0	5.6	6.8	5.0	5.5	4.4
Yuma	NA	22.7	13.6	11.1	7.3	7.2	7.4	4.8	3.4	5.6	2.0

* Per 1,000 live births
** Preliminary

TABLE 8-18

SELECTED CAUSES OF MORTALITY BY COUNTY OF RESIDENCE
ARIZONA, 1986

Cause of Death	Total	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma
ALL CAUSES	25,409	335	662	383	399	189	50	128	14,106	795	484	5,090	942	147	1,032	667
Heart Disease	8,050	57	212	89	140	54	13	32	4,576	234	115	1,633	288	43	350	214
Cancer	5,808	46	161	71	82	35	20	29	3,261	233	88	1,140	199	41	263	139
Accidents	1,563	68	42	54	20	17	2	18	766	51	74	280	74	8	35	54
Motor Vehicle	936	46	24	32	12	12	-	11	453	33	50	166	47	3	20	27
Other	627	22	18	22	8	5	2	7	313	18	24	114	27	5	15	27
Stroke	1,443	13	38	20	22	10	6	1	802	51	17	313	39	10	63	38
Chronic Obstructive Pulmonary Disease	1,429	10	33	12	21	9	3	2	786	49	12	299	69	7	70	47
Influenza and Pneumonia	880	13	11	16	11	11	1	4	486	19	24	187	26	6	49	16
Suicide	624	13	13	16	6	1	-	3	354	23	13	115	30	-	23	14
Diabetes	447	6	15	11	9	2	1	4	227	15	17	80	28	6	11	15
Symptoms and Ill-Defined Conditions	335	18	8	11	10	2	1	13	175	13	14	39	12	4	5	10
Homicide	335	12	4	4	3	2	-	-	191	7	7	64	21	2	9	9
Atherosclerosis	296	-	1	3	1	6	-	3	127	9	3	98	8	-	18	19
Alcoholism	276	12	7	8	6	2	-	1	144	5	11	47	15	-	8	10
Diseases of the Arteries	265	-	6	6	6	4	-	2	132	11	6	67	6	2	11	6
Perinatal Conditions	229	4	5	5	2	2	1	-	145	3	1	45	7	4	3	2
Congenital Anomalies	188	7	2	6	2	2	-	-	109	2	7	31	6	-	5	9
All Other Causes	3,241	56	104	51	58	30	2	16	1,825	70	75	652	114	14	109	65

TABLE 8-19

RATES* FOR SELECTED CAUSES OF MORTALITY BY COUNTY OF RESIDENCE
ARIZONA, UNITED STATES: 1986

Cause of Death	U.S.**	Arizona	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma
ALL CAUSES	870.8	758.0	587.3	678.3	430.6	1,005.0	770.4	522.1	907.8	737.9	1,027.5	654.3	791.6	907.6	533.6	1,125.4	758.5
Heart Disease	318.7	240.2	94.2	217.2	100.0	352.6	220.1	135.8	226.9	239.4	302.4	155.5	254.0	277.5	156.1	381.7	243.4
Cancer	193.3	173.3	76.0	164.9	79.8	206.5	142.7	208.8	205.7	170.6	301.1	119.0	177.3	191.7	148.8	286.8	158.1
Stroke	61.3	43.0	21.5	38.9	22.5	55.4	40.8	62.7	7.1	41.9	65.9	23.0	48.7	37.6	36.3	68.7	43.2
Accidents	39.7	46.6	112.4	43.0	60.7	50.4	69.3	20.9	127.7	40.1	85.9	100.0	43.5	71.3	29.0	38.2	61.4
Motor Vehicles	20.1	27.9	76.0	24.6	36.0	30.2	48.9	-	78.0	23.7	42.6	67.6	25.8	45.3	10.9	21.8	30.7
Other	19.5	18.7	36.4	18.4	24.7	20.1	20.4	20.9	49.6	16.4	23.3	32.4	17.7	26.0	18.1	16.4	30.7
Chronic Obstructive Pulmonary Disease	31.3	42.6	16.5	33.8	13.5	52.9	36.7	31.3	14.2	41.1	63.3	16.2	46.5	66.5	25.4	76.3	53.4
Influenza and Pneumonia	29.2	26.2	21.5	11.3	18.0	27.7	44.8	10.4	28.4	25.4	24.6	32.4	29.1	25.0	21.8	53.4	18.2
Diabetes	15.1	13.3	9.9	15.4	12.4	22.7	8.1	10.4	28.4	11.9	19.4	23.0	12.4	27.0	21.8	12.0	17.1
Symptoms and Ill-Defined Conditions	13.7	10.0	29.7	8.2	12.4	25.2	8.1	10.4	92.2	9.1	16.8	18.9	6.1	11.6	14.5	5.4	11.4
Suicide	13.1	18.6	21.5	13.3	18.0	15.1	4.1	-	21.3	18.5	29.7	17.6	17.9	28.9	-	25.1	15.9
Alcoholism	NA	8.2	19.8	7.2	9.0	15.1	8.1	-	7.1	7.5	6.5	14.9	7.3	14.4	-	8.7	11.4
Atherosclerosis	9.2	8.8	-	1.0	3.4	2.5	24.5	-	21.3	6.6	11.6	4.1	15.2	7.7	-	19.6	21.6
Other Diseases of the Arteries	9.2	7.9	-	6.1	6.7	15.1	16.3	-	14.2	6.9	14.2	8.1	10.4	5.8	7.3	12.0	6.8
Homicide	8.9	10.0	19.8	4.1	4.5	7.6	8.1	-	-	10.0	9.0	9.5	9.9	20.2	7.3	9.8	10.2
Perinatal Conditions	7.5	6.8	11.6	5.1	5.6	5.0	8.1	10.4	-	7.6	3.9	1.3	7.0	6.7	14.5	5.4	10.2
Congenital Anomalies	5.1	5.6	6.6	2.0	6.7	5.0	8.1	-	-	5.7	2.6	9.5	4.8	5.8	-	3.3	2.3
All Other Causes	115.6	96.7	92.6	106.5	57.3	146.1	122.3	20.9	113.5	95.5	90.5	101.4	101.4	109.8	50.8	118.9	73.9

* Per 100,000 population
** Provisional

TABLE 8-20

PERCENT OF TOTAL DEATHS FOR THE 15 LEADING CAUSES OF MORTALITY,
ARIZONA, UNITED STATES: 1986

Cause of Death	U.S.*	Arizona	Apache	Cochise	Coconino	Gila	Graham	Greenlee	La Paz	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma
ALL CAUSES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Heart Disease	38.6	31.7	17.0	32.0	23.2	35.1	28.6	26.0	25.0	32.4	29.4	23.8	32.0	30.6	29.2	33.9	32.1
Cancer	22.2	22.9	13.7	24.3	18.5	20.5	18.5	40.0	22.7	23.1	29.3	18.2	22.4	21.1	27.9	25.5	20.8
Stroke	7.0	5.7	3.9	5.7	5.2	5.5	5.3	12.0	0.8	5.7	6.4	3.5	6.1	4.1	6.8	6.1	5.7
Accidents	4.6	6.1	20.3	6.3	14.1	5.0	9.0	4.0	14.1	5.4	6.4	15.3	5.5	7.9	5.4	3.4	8.1
Motor Vehicles	2.3	3.7	13.7	3.6	8.4	3.0	6.3	-	8.6	3.2	4.1	10.3	3.3	5.0	2.0	1.9	4.0
Other	2.2	2.5	6.6	2.7	5.7	2.0	2.6	4.0	5.5	2.2	2.3	5.0	2.2	2.9	3.4	1.5	4.0
Chronic Obstructive Pulmonary Disease	3.6	5.6	3.0	5.0	3.1	5.3	4.8	6.0	1.6	5.6	6.2	2.5	5.9	7.3	4.8	6.8	7.0
Influenza and Pneumonia	3.4	3.5	3.9	1.7	4.2	2.8	5.8	2.0	3.1	3.4	2.4	5.0	3.7	2.8	4.1	4.7	2.4
Diabetes	1.7	1.8	1.8	2.3	2.9	2.3	1.1	2.0	3.1	1.6	1.9	3.5	1.6	3.0	4.1	1.1	2.2
Symptoms and Ill-Defined Conditions	1.6	1.3	5.4	1.2	2.9	2.5	1.1	2.0	10.2	1.2	1.6	2.9	0.8	1.3	2.7	0.5	1.5
Suicide	1.5	2.5	3.9	2.0	4.2	1.5	0.5	-	2.3	2.5	2.9	2.7	2.3	3.2	-	2.2	2.1
Alcoholism	NA	1.1	3.6	1.1	2.1	1.5	1.1	-	0.8	1.0	0.6	2.3	0.9	1.6	-	0.8	1.5
Atherosclerosis	1.1	1.2	-	0.2	0.8	0.2	3.2	-	2.3	0.9	1.1	0.6	1.9	0.8	-	1.7	2.8
Other Diseases of the Arteries	1.1	1.0	-	0.9	1.6	1.5	2.1	-	1.6	0.9	1.4	1.2	1.3	0.6	1.4	1.1	0.9
Homicide	1.0	1.3	3.6	0.6	1.0	0.7	1.1	-	-	1.4	0.9	1.4	1.3	2.2	1.4	0.9	1.3
Perinatal Conditions	0.9	0.9	1.2	0.8	1.3	0.5	1.1	2.0	-	1.0	0.4	0.2	0.9	0.7	2.7	0.3	0.3
Congenital Anomalies	0.6	0.7	2.1	0.3	1.6	0.5	1.1	-	-	0.8	0.2	1.4	0.6	0.6	-	0.5	1.3
All Other Causes	13.3	12.7	16.7	15.7	13.3	14.5	15.9	4.0	12.5	12.9	8.8	15.5	12.8	12.1	9.5	10.6	9.7

* Provisional

MARRIAGE AND DIVORCE STATISTICS

TABLE 9-1
MARRIAGES BY COUNTY OF OCCURRENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	20,031	10,153	19,069	26,558	30,223	31,906	31,408	30,809	33,311	35,723	36,025
Apache	79	75	103	146	165	196	227	169	192	181	217
Cochise	237	352	681	874	1,072	1,008	946	995	961	992	981
Coconino	384	247	561	645	775	946	878	554	624	656	855
Gila	282	209	391	469	512	551	437	417	411	403	418
Graham	120	119	208	292	317	331	276	270	261	284	327
Greenlee	80	56	103	150	85	103	90	68	63	53	53
La Paz	NA	NA	NA	NA	NA	NA	NA	103	98	186	193
Maricopa	3,866	4,640	10,193	13,022	16,134	17,176	17,551	17,431	19,408	21,860	21,340
Mohave	599	67	121	223	407	481	457	491	531	698	788
Navajo	259	206	328	420	581	511	519	496	517	548	504
Pima	1,406	1,818	3,933	5,252	5,728	6,152	6,096	6,046	6,282	5,692	6,325
Pinal	1,065	531	746	791	947	925	861	857	920	923	847
Santa Cruz	494	262	364	316	311	286	316	289	325	350	356
Yavapai	310	210	382	465	610	745	658	726	743	887	889
Yuma	10,850	1,361	955	3,493	2,579	2,495	2,096	1,897	1,975	2,010	1,932

TABLE 9-2
MARRIAGE RATES* BY COUNTY OF OCCURRENCE
ARIZONA, UNITED STATES: 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
U.S.	11.1	8.5	10.6	10.0	10.9	10.8	10.6	10.5	10.5	10.2*	10.2**
ARIZONA	26.7	7.8	10.8	11.9	11.1	11.4	11.0	10.5	10.9	11.2	10.7
Apache	2.8	2.5	3.2	3.6	3.2	3.7	4.1	3.0	3.7	3.2	3.6
Cochise	7.5	6.4	11.0	11.8	12.4	11.3	10.5	10.9	10.5	10.3	10.0
Coconino	16.1	5.9	11.6	9.9	10.3	11.8	10.5	6.8	7.6	7.6	9.6
Gila	11.7	8.1	13.4	14.4	13.8	14.6	11.4	10.7	10.9	10.6	10.5
Graham	9.2	8.5	12.5	14.5	13.6	14.3	11.5	11.2	10.9	12.2	13.3
Greenlee	6.2	4.9	10.0	12.6	7.5	8.5	6.9	5.7	5.5	6.1	5.5
La Paz	-	-	-	-	-	-	-	7.9	7.3	12.9	13.7
Maricopa	11.7	7.0	10.5	10.7	10.7	11.1	11.0	10.7	11.2	12.1	11.2
Mohave	70.4	8.7	4.7	6.0	7.3	8.5	8.0	8.2	8.1	9.6	10.2
Navajo	8.8	5.4	6.9	7.2	8.5	7.4	7.3	6.9	7.3	7.6	6.8
Pima	10.0	6.8	11.2	11.9	10.9	11.2	10.7	10.4	10.4	9.1	9.8
Pinal	24.7	8.5	10.9	9.0	10.4	9.9	9.1	8.9	9.3	9.2	8.2
Santa Cruz	52.9	24.2	26.1	18.3	15.2	13.5	14.4	13.0	14.5	12.9	12.9
Yavapai	12.4	7.3	10.3	9.5	9.0	10.7	9.1	9.9	9.2	10.1	9.7
Yuma	387.4	29.4	15.7	49.7	28.5	27.3	22.1	23.5	23.1	22.3	22.0

* Per 1,000 estimated midyear population

** Preliminary

TABLE 9-3

DISSOLUTIONS OF MARRIAGE BY COUNTY OF OCCURRENCE
ARIZONA, 1950-86

County	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
ARIZONA	4,062	4,780	13,298	17,577	19,858	20,819	20,259	19,875	20,009	21,157	23,062
Apache	43	24	34	35	82	85	91	83	97	110	136
Cochise	131	156	403	657	666	628	627	634	701	669	802
Coconino	81	141	280	380	432	489	416	378	429	578	458
Gila	117	86	219	315	259	281	256	253	289	239	235
Graham	59	50	131	192	157	193	181	146	152	203	133
Greenlee	54	32	55	84	52	53	61	52	32	35	19
La Paz	-	-	-	-	-	-	-	94	76	77	74
Maricopa	2,483	2,724	8,023	9,826	11,187	11,871	11,656	11,338	11,626	12,626	14,409
Mohave	44	26	126	342	457	494	498	531	482	563	558
Navajo	75	64	140	224	212	234	249	246	273	258	360
Pima	580	987	2,703	3,772	4,141	4,336	3,936	3,811	3,747	3,911	3,992
Pinal	127	142	449	531	744	696	666	672	699	622	644
Santa Cruz	27	22	42	73	106	76	131	116	97	84	92
Yavapai	119	137	216	351	543	550	603	645	629	523	544
Yuma	122	189	477	795	820	833	888	876	680	659	606

TABLE 9-4

DISSOLUTIONS OF MARRIAGE RATES* BY COUNTY OF OCCURRENCE
ARIZONA, UNITED STATES: 1950-86

	1950	1960	1970	1975	1980	1981	1982	1983	1984	1985	1986
U.S.	2.6	2.2	3.5	4.8	5.2	5.3	5.0	5.0	4.9	5.0	5.0**
ARIZONA	5.4	3.7	7.5	7.9	7.3	7.4	7.0	6.8	6.5	6.6	6.9
Apache	1.5	0.8	1.1	0.9	1.6	1.6	1.6	1.5	1.9	1.9	2.2
Cochise	4.2	2.8	6.5	8.8	7.7	7.1	7.0	7.0	7.7	6.9	8.2
Coconino	3.4	3.4	5.8	5.8	5.8	6.1	5.0	4.6	5.2	6.7	5.1
Gila	4.8	3.3	7.5	9.7	7.0	7.5	6.7	6.5	7.6	6.3	5.9
Graham	4.5	3.6	7.9	9.5	6.9	8.3	7.6	6.0	6.3	8.7	5.4
Greenlee	4.2	2.8	5.3	7.1	4.6	4.4	4.7	4.3	2.8	4.0	2.0
La Paz	-	-	-	-	-	-	-	7.2	5.7	5.3	5.2
Maricopa	7.5	4.1	8.3	8.1	7.4	7.6	7.3	6.9	6.7	7.0	7.5
Mohave	5.2	3.4	4.9	9.1	8.2	8.7	8.7	8.9	7.4	7.8	7.2
Navajo	2.5	1.7	2.9	3.9	3.1	3.4	3.5	3.4	3.9	3.6	4.9
Pima	4.1	3.7	7.7	8.6	7.8	7.9	6.9	6.6	6.2	6.3	6.2
Pinal	2.9	2.3	6.5	6.1	8.2	7.4	7.0	7.0	7.1	6.2	6.2
Santa Cruz	2.9	2.0	3.0	4.2	5.2	3.6	6.0	5.2	4.3	3.1	3.3
Yavapai	4.8	4.7	4.8	7.1	8.0	7.9	8.4	8.8	7.8	5.9	5.9
Yuma	4.4	4.1	7.8	11.3	9.1	9.1	9.4	10.9	7.9	7.3	6.9

* Per 1,000 estimated midyear population.

** Preliminary

ABORTION STATISTICS

TABLE 10-1

INDUCED ABORTIONS TO ARIZONA RESIDENTS BY COUNTY OF RESIDENCE,*
ARIZONA, 1977-86

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
ARIZONA	5,896	6,616	7,620	8,959	10,047	11,965	13,081	13,909	14,537	13,291
Apache	74	93	94	33	34	39	35	26	45	22
Cochise	150	120	94	138	152	220	252	249	279	259
Coconino	206	269	279	374	326	389	422	394	313	213
Gila	57	51	55	60	79	84	73	62	69	50
Graham	18	21	21	37	22	30	31	20	26	20
Greenlee	10	13	9	12	8	17	11	15	17	15
La Paz	NA	NA	NA	NA	NA	NA	17	14	11	11
Maricopa	3,782	4,233	5,645	5,861	6,609	7,989	8,501	9,646	10,035	9,389
Mohave	25	28	44	44	27	34	21	50	24	36
Navajo	59	67	59	72	62	104	100	59	60	40
Pima	1,140	1,359	979	1,897	2,316	2,553	3,097	2,876	3,152	2,847
Pinal	204	152	150	199	166	227	251	164	182	175
Santa Cruz	46	40	32	42	43	53	49	57	58	49
Yavapai	46	92	100	135	170	186	169	139	141	78
Yuma	79	78	59	55	33	40	52	138	125	87

* Excludes records with unknown place of residence, and records of out-of-state residents

D8HRS10-1

TABLE 10-2

CHARACTERISTICS OF WOMEN RECEIVING ABORTIONS,
ARIZONA, 1981-1986*

	1981	1982	1983	1984	1985	1986
TOTAL ABORTIONS PERFORMED IN ARIZONA	10,573	12,539	13,664	14,874	15,604	14,522
RESIDENCE						
Resided in state	10,047	11,965	13,081	13,909	14,537	13,291
Resided out-of-state	437	414	576	362	403	871
Not stated	89	160	7	603	664	360
AGE						
19 years and under	3,006	3,462	3,483	3,422	3,617	2,964
20-24 years	3,878	4,585	5,008	5,637	5,800	4,622
25 years and over	3,296	4,058	4,640	5,340	5,747	5,289
Not stated	393	434	533	475	440	416
MARITAL STATUS						
Married	1,958	2,315	2,526	2,841	2,910	3,144
Unmarried	8,108	9,593	10,603	11,254	11,906	9,427
Not stated	507	601	535	779	788	720
ETHNIC GROUP						
White	8,691	10,020	10,854	12,816	13,553	11,442
Non-white	1,310	1,821	2,113	1,329	1,411	1,211
Not stated	572	698	697	729	640	638
YEARS OF EDUCATION						
8 years or less	226	347	342	488	550	448
9-16 years	8,766	10,398	11,736	13,058	13,637	11,561
17 years or more	305	354	393	623	665	564
Not stated	1,276	1,440	1,193	705	752	718
PREVIOUS LIVE BIRTHS						
None	6,722	7,851	8,150	8,597	8,892	7,204
1 or more	3,851	4,688	5,514	6,277	6,712	6,087

	1981	1982	1983	1984	1985	1986
FACILITY						
Clinic	7,055	8,892	9,009	9,715	9,862	7,164
Doctor's Office	3,476	3,584	4,623	4,111	5,011	5,276
Hospital	39	55	27	64	43	40
Not stated	3	8	5	984	688	811
TYPE OF PROCEDURE						
Curretage	10,214	11,933	13,365	14,669	15,175	12,979
Intrauterine Instillation	5	1	-	-	-	1
Hysterectomy/Hysterotomy	2	2	-	1	-	-
Not stated	352	603	299	204	429	311
WEEKS OF GESTATION						
12 weeks or under	9,265	10,564	11,784	12,937	13,415	11,266
13 weeks or over	1,108	1,659	1,712	1,937	1,952	1,778
Not stated	200	316	168	-	237	247
PREVIOUS INDUCED ABORTIONS						
None	7,482	8,610	9,172	9,798	10,201	8,526
1	2,375	2,897	3,229	3,611	3,747	3,283
2 or more	716	1,032	1,263	1,465	1,656	1,492
COMPLICATIONS						
No	10,555	12,531	13,650	14,869	15,595	13,286
Yes	18	8	14	5	9	5
REASON FOR TERMINATION						
Elective	10,193	10,511	13,328	14,611	15,274	13,141
Medical	33	15	14	23	16	7
Not stated	347	2,013	322	240	314	143

* 1986 data are for Arizona residents

TABLE 10-3

BIRTH RATES* AND ABORTION RATES BY AGE GROUP,
ARIZONA, 1981-1986

AGE GROUP		1981	1982	1983	1984	1985	1986
UNDER 15**	Birth rate	1.1	1.2	1.1	1.0	0.9	1.3
	Abortion rate	0.5	0.9	0.9	0.7	1.0	0.8
15-19	Birth rate	65.8	67.4	65.9	63.6	67.0	66.7
	Abortion rate	24.3	28.3	26.6	28.6	29.6	25.1
20-24	Birth rate	134.9	137.0	132.8	137.4	144.8	142.9
	Abortion rate	28.6	33.7	36.8	41.3	42.6	36.9
25-29	Birth rate	119.7	119.9	117 2	116.7	118.8	117.8
	Abortion rate	16.6	18.8	20.6	22.0	20.6	21.0
30-34	Birth rate	67.9	67.5	67.6	70.1	73.8	74.1
	Abortion rate	7.8	9.3	10.5	11.5	11.5	11.2
35-39	Birth rate	24.9	25.5	25.6	25.6	27.0	23.7
	Abortion rate	3.5	4.5	4.7	5.9	5.6	5.8
40-44	Birth rate	5.3	5.0	5.2	5.0	5.5	5.2
	Abortion rate	0.9	1.6	1.5	1.7	1.7	1.7
45 and over***	Birth rate	0.2	0.4	0.3	0.3	0.2	0.2
	Abortion rate	0.1	0.1	0.1	0.2	0.2	0.1
TOTAL-	General fertility rate*	79.0	78.7	77.1	77.2	79.6	78.2
	Abortion rate	16.3	18.8	19.6	20.9	19.7	17.1

* All rates per 1,000 female population in corresponding age group

** Female population 10-14 years of age

*** Female population 45-49 years of age

\- Women of childbearing age, 15-44 years of age

* Total number of live births per 1,000 women of childbearing age

TABLE 10-4

NUMBER OF WOMEN HAVING ABORTIONS PER 1,000 WOMEN GIVING BIRTH, ARIZONA, 1981-1986

COUNTY OF RESIDENCE	1981	1982	1983	1984	1985	1986
Apache	20.2	21.1	19.6	14.3	24.3	12.5
Cochise	92.3	141.5	161.0	153.9	179.0	169.9
Coconino	188.1	220.0	233.4	217.3	160.8	116.5
Gila	103.9	103.7	106.9	92.3	107.5	80.0
Graham	43.2	64.1	71.3	44.8	64.0	50.6
Greenlee	26.7	66.4	59.5	76.9	105.6	141.5
La Paz*	NA	NA	NA	71.8	47.0	51.2
Maricopa	237.7	279.3	295.6	314.1	297.1	265.8
Mohave	30.5	38.4	22.7	50.6	24.8	38.8
Navajo	34.1	55.2	52.3	31.6	31.7	21.1
Pima	353.7	278.9	323.1	297.2	306.7	273.1
Pinal	87.4	27.2	134.3	88.7	88.8	85.2
Santa Cruz	82.8	107.9	107.2	111.3	110.9	97.2
Yavapai	170.3	174.3	158.4	139.1	129.6	69.1
Yuma	17.0	21.0	30.9	78.8	63.7	44.2
TOTAL	204.8	238.2	258.2	269.9	262.9	218.6

* Included in Yuma County until January 1, 1983

TABLE 10-5

LIVE BIRTHS, FETAL DEATHS AND ABORTIONS BY COUNTY OF RESIDENCE, ARIZONA, 1986

COUNTY OF RESIDENCE	LIVE BIRTHS	FETAL DEATHS	INDUCED ABORTIONS	PREGNANCIES*	
				NUMBER	PERCENT ENDING IN ABORTION
Apache	1,757	13	22	1,792	1.2
Cochise	1,524	8	259	1,791	14.5
Coconino	1,828	12	213	2,053	10.4
Gila	625	4	50	679	7.4
Graham	395	5	20	420	4.8
Greenlee	106	0	15	121	12.4
La Paz	215	0	11	226	4.9
Maricopa	35,334	225	9,389	44,948	20.9
Mohave	1,065	11	36	1,112	3.2
Navajo	1,896	6	40	1,942	2.1
Pima	10,423	83	2,847	13,353	21.3
Pinal	2,053	7	175	2,235	7.8
Santa Cruz	504	0	49	553	8.9
Yavapai	1,129	6	78	1,213	6.4
Yuma	1,968	11	87	2,066	4.2
Total Arizona Residents	60,822	391	13,391	74,504	17.8

* Sum of recorded live births, reported fetal deaths and reported induced terminations of pregnancy. The actual number of pregnancies is undoubtedly higher, considering at least the fact of unreported abortions performed to Arizona residents in and outside Arizona.

TABLE 10-6

ABORTIONS BY AGE AND COUNTY OF RESIDENCE
ARIZONA, 1986

		AGE									
COUNTY	ALL AGES	UNDER 15	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45+	UNKNOWN AGE
ARIZONA	13,291	91	1,010	1,863	4,622	3,021	1,455	661	138	14	416
Apache	22	0	1	4	7	4	3	2	0	0	1
Cochise	259	4	26	33	80	56	30	16	0	0	14
Coconino	213	0	15	40	76	53	16	5	2	0	6
Gila	50	0	9	7	12	13	3	2	0	0	4
Graham	20	0	3	3	5	2	3	0	1	0	3
Greenlee	15	1	3	0	4	2	3	1	1	0	0
La Paz	11	0	2	2	5	2	0	0	0	0	0
Maricopa	9,389	71	725	1,321	3,340	2,158	1,024	455	102	8	185
Mohave	36	0	4	2	16	9	1	0	0	0	4
Navajo	40	1	4	2	13	10	4	5	0	0	1
Pima	2,847	12	181	385	950	635	317	152	27	5	183
Pinal	175	1	18	31	57	34	22	7	2	0	3
Santa Cruz	49	0	6	8	9	9	6	2	1	0	8
Yavapai	78	1	8	7	24	20	9	3	2	1	3
Yuma	87	0	5	18	24	14	14	11	0	0	1

TABLE 10-7

BIRTHS, FETAL DEATHS AND ABORTIONS TO TEENS
BY COUNTY OF RESIDENCE AND AGE GROUP,
ARIZONA, 1986

County of Residence	Under 15			Total Pregnancies*	15 - 17			Total Pregnancies	18 - 19			Total Pregnancies	All, 19 or Less			Total Pregnancies
	Live Births	Fetal Deaths	Abortions		Live Births	Fetal Deaths	Abortions		Live Births	Fetal Deaths	Abortions		Live Births	Fetal Deaths	Abortions	
ARIZONA	152	2	91	245	2,914	12	1,010	3,936	5,310	29	1,863	7,202	8,376	43	2,964	11,383
Apache	10	0	0	10	94	1	1	96	174	0	4	178	278	1	5	284
Cochise	0	0	4	4	66	0	26	92	133	0	33	166	199	0	63	262
Coconino	4	0	0	4	115	0	15	130	152	1	40	193	271	1	55	327
Gila	4	0	0	4	41	0	9	50	73	0	7	80	118	0	16	134
Graham	3	0	0	3	27	0	3	30	48	0	3	51	78	0	6	84
Greenlee	0	0	1	1	9	0	3	12	10	0	0	10	19	0	4	23
La Paz	0	0	0	0	13	0	2	15	26	0	2	28	39	0	4	43
Maricopa	86	1	71	158	1,637	8	725	2,390	2,975	16	1,321	4,312	4,718	25	2,117	6,860
Mohave	2	0	0	2	61	0	4	65	102	2	2	106	165	2	6	173
Navajo	10	0	1	11	110	0	4	114	180	1	2	183	300	1	7	308
Pima	18	1	12	31	418	2	181	601	856	8	385	1,249	1,292	11	578	1,881
Pinal	9	0	1	10	151	1	18	170	241	0	31	272	401	1	50	452
Santa Cruz	0	0	0	0	15	0	6	21	48	0	8	56	63	0	14	77
Yavapai	2	0	1	3	52	0	8	60	94	0	7	101	148	0	16	164
Yuma	4	0	0	4	85	0	5	90	198	1	18	217	287	1	23	311

* Sum of recorded live births, reported fetal deaths and reported induced terminations of pregnancy. The actual number of pregnancies is undoubtedly higher, considering at least the fact of unreported abortions performed to Arizona residents in and outside Arizona.

TABLE 10-8

ABORTIONS BY WEEKS OF GESTATION AND AGE, ARIZONA RESIDENTS, 1986

Weeks of Gestation	Age								
	<15	15-19	20-24	25-29	30-34	35-39	40	Unknown	Total
8	19	882	1,746	1,323	715	306	76	146	5,212
9	14	455	764	477	204	112	19	80	2,125
10	12	451	717	443	216	95	18	68	2,020
11	11	256	376	195	98	39	7	38	1,020
12	4	221	324	190	78	33	8	31	889
13	7	139	163	89	49	15	5	16	483
14	6	109	108	66	16	15	3	8	331
[illegible]	2	63	68	39	11	4	2	5	194
16	5	67	78	37	9	7	4	9	216
17	4	33	35	29	8	5	2	2	118
18	3	45	47	24	8	5	1	2	135
19	1	29	39	13	3	7	0	4	96
20	1	54	58	29	11	6	3	1	163
21	1	13	16	10	1	0	1	0	42
Unknown	1	57	83	57	28	16	4	6	247
Total	91	2,873	4,622	3,021	1,455	661	152	416	13,291

Arizona Department of Health Services
1740 West Adams Street
Phoenix, Arizona 85007

(602) 255-1216